

DOCUMENT RESUME

ED 051 049

SO 001 331

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TITLE A Study of the Measured Readability Level of
Selected Intermediate Grade Social Studies Textbooks.
INSTITUTION Indiana Univ., South Bend. School of Education.
PUB DATE Jun 71
NOTE 142p.
EDRS PRICE MF-\$0.65 HC-\$6.58
DESCRIPTORS Elementary Grades, Grade 4, Grade 5, Grade 6,
*History Textbooks, *Readability, *Social Studies,
*Textbook Evaluation, *Textbook Research
IDENTIFIERS *Dale-Chall Readability Formula, Indiana

ABSTRACT

It was the purpose of this study to determine the readability level of all social studies textbooks authorized for purchase in the adoption made by the Textbook Commission of the Indiana State Board of Education on December 12, 1968 for five years beginning July 1, 1969. A thorough search of the literature and research did not reveal that their readability level had been determined. Consequently, twenty-three textbooks were analyzed utilizing the Dale-Chall formula for written materials. The curricular areas were: Indiana history in grade 4, United States and Canadian studies in Grade 5, and Latin American and Western American studies in grade 6. Chapter 3 described: 1) the methods of collecting the materials studies; 2) the treatment of the source materials; and, 3) the statistical analysis of the data presented in detail in chapter 4 and the appendix by grade level and by text. The summary findings and conclusion in chapter 5 were: 1) the text for grade 4 were above the intended readability level; 2) the texts for grade 5 and 6 appeared to be at or below the intended readability level; 3) no text examined appeared to be written with any idea of progressive difficulty in mind; however, 4) there was a wide range of level within each text. It was recommended that texts be carefully examined for readability level before adoption. (Author/SBE)

ED051049

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A STUDY OF THE MEASURED READABILITY LEVEL OF SELECTED
INTERMEDIATE GRADE SOCIAL STUDIES TEXTBOOKS

by

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56 001 331

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June, 1971

ACKNOWLEDGMENT

The completion of a study of this kind depends upon the assistance and cooperation of many persons. The investigator wishes to thank the following graduate students for their contributions: Carolyn Higgins, Stephen Marisin, Michael Montgomery, Joyce Newell, Phyllis Pajkowski, Sharon Rensberger, Opal Speicher, Sue Thornton, Janet Weis, Joyce Welter, and Dorothy Wilson.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

It is a difficult task to select social studies textbooks for use in public schools. In the State of Indiana this task is assigned to the Textbook Commission of the Indiana State Board of Education.

Textbooks are submitted to the Textbook Commission by the publishers. From those texts submitted the Commission adopts texts, by grade and/or subject area, for a period of five years. Texts from the "adopted list" are then authorized for adoption by the local school districts within the state. Only texts from the adopted list are authorized and may be purchased for classroom use. All other texts which are to be used are considered as "supplemental" and prior consent for purchase must be approved by local school districts.

Statement of the Problem

It was the purpose of this study to determine the readability level of all intermediate grade level social studies textbooks authorized for purchase in the adoption made by the Textbook Commission of the Indiana State Board of Education on December 12, 1968. These adoptions were for a period of five years beginning July 1, 1969.

The following is a list of the textbooks analyzed,

classified by grade level:

Grade 4:

Living Indiana History (I-1)* **

Indiana Through the Years (I-2)

Indiana Adventure (I-3)

Grade 5:

The United States and Canada (I-4)

Knowing Our Neighbors in the United States and Canada (I-5)

Understanding Your Country and Canada (I-6)

Exploring Regions of the Western Hemisphere (I-7)

The Changing New World: United States and Canada (I-8)

This is Our Land (I-9)

In These United States and Canada (I-10)

Grade 6 - Latin America:

Latin America (I-11)

Knowing Our Neighbors in Latin America (I-12)

Living as American Neighbors (I-13)

Learning About Latin America (I-14)

Exploring Regions of Latin America and Canada (I-15)

Understanding Latin America (I-16)

In Latin American Lands (I-17)

*Numbers in parentheses refer to numbered references in the bibliography; those after the colon are page numbers.

**A separate bibliography has been prepared for the textbooks studied. References to these textbooks are preceded by "I" (Intermediate grade level).

Grade 6 - Western Europe

Long Ago in the Old World (I-18)

Living in the Old World (I-19)

World Background for American History (I-20)

Europe and the Soviet Union (I-21)

Exploring the Old World (I-22)

The Great Adventure (I-23)

Importance of the Study

A thorough search of the literature and reports of research had not revealed that the texts adopted by the Textbook Commission of the Indiana State Board of Education had been analyzed to determine their readability level. This study was intended, therefore, to add to that body of knowledge concerning the readability formula estimates of those intermediate grade level social studies textbooks currently in use in the State of Indiana. Further, it is believed that this study will have additional importance to educators throughout the United States as these texts are in use elsewhere in this country.

Definitions of Terms Used

Several terms employed in the description of this study were defined as follows:

Readability. The term used to indicate:

. . . the quality of a piece of reading matter that makes it . . . understandable to those for whom it is written, at whatever level of educational experience.
(16:442)

Readability formula. This term refers to:

. . . a method of measurement intended as a predictive device that will provide quantitative, objective estimates of the style difficulty of writing. . . . Primarily, a formula is a means of rating a piece of writing after it has been written. (22:3;18)

Social Studies. The term used to designate that area of the curriculum

. . . which deals specifically with man and his dynamic relation to his social and physical environments. The social studies are concerned with a knowledge of how man is influenced by his environment, how he in turn uses and alters his environment to satisfy individual and group needs, how customs and institutions have emerged, how man is attempting to solve current problems, and how he draws upon his experiences to plan for the future. . . (29:5-6)

Textbook.

. . . a book dealing with a definite subject of study, systematically arranged, intended for use at a specified level of instruction, . . . (16:567-568)

Limitations of the Study

1. The use of a readability formula as a criterion measure imposed certain limitations upon the study. (22:24-25)

Organization of the Remainder of the Study

This study has in Chapter II a brief review of pertinent literature and related research. Chapter III is the organization of the design of the study, including the procedure, sources of data, and methods of data evaluation. The presentation and analysis of the data are reported in Chapter IV. The summary, conclusions, and recommendations of this study are reported in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

The literature dealt with in this study concerned the area of readability formulas and their use with textbooks, particularly in the area of elementary education.

Historical Aspects

People have long been concerned with readability, or its parallel listenability. Klare illustrated the ancients' concern when he cited the passage from the Bible, I Corinthians 14:9, "Except ye utter by the tongue words easy to be understood, how shall it be known what is spoken? For ye shall speak unto the air." He continued to trace the history of readability, or listenability, through the Talmudists in 900 A. D. to the vocabulary interest (ease of understanding) in the early McGuffey Readers in the early 1840's. (22:29-30)

The awareness of structural elements contributing to the difficulty of reading material is not new. Lorge (24) discussed Rubakin's work in Russia in the late nineteenth century. Rubakin was interested in providing literature for the masses. He decided that difficult (unfamiliar) words and unnecessarily long words contributed to the difficulty of reading.

Klare identified Thorndike's The Teacher's Word Book, published in 1921, as one of the most important events presaging the actual development of readability formulas. In

1923 the word list taken from this book was used by Lively and Pressey to develop the first readability formula. During this and other early beginnings of readability investigation little attention was paid to sentence length as a possible factor in readability. L. A. Sherman and his students first studied sentence length quantitatively as an indicator of style. In recent years the major elements of most, if not all, readability formulas have been sentence length and/or word difficulty. Klare further identified four distinct periods in the development of readability formulas as: Early Formulas (1921-34); Detailed Formulas (1934-38); Efficient Formulas (1938-53); and Specialized Formulas (1953-59).

The interest in and potentiality of readability formulas has led many persons to make contributions in this area. Between 1921 and 1943 some of the men who have had their names associated with readability formulas were Pressey, Dolch, Washburn, Dale, Gray, Yoakam, Flesch, and Lorge.

Advances have been made within the last five years in the development of readability formulas, according to Bormuth. He believes that formulas have increased in accuracy, due largely to the fact that researchers have developed tools which have greatly aided in the study of the topic. He believes, that as a result of these advances, educators have had or will have in the near future, powerful new tools to use in determining the suitability of instructional materials. (4:845)

Uses of Readability Formulas

Chall, writing in the Educational Research Bulletin, stated that the earliest use made of readability measurement was in the selection and preparation of instructional materials for both elementary and secondary schools. Following this, application spread to other fields, chief among them being adult education materials; government publications (particularly in the armed forces training manuals and instructional materials); the mass communication media, particularly newspapers and magazines; and industry publications, particularly in the areas of employee bulletins and advertising. (7:89-92)

Klare supported the above observation by Chall. He identified the following broad categories of uses of readability formulas: (1) Education, including elementary education, secondary education, collegiate education, and adult education; (2) Business and Industry; (3) Journalism and Mass Communication; (4) Legal and Governmental Writing; (5) Psychological Tests and Questionnaires; (6) Writing; (7) Speech; and (8) Foreign Language. (22:91-98)

Chall, summarizing the basic philosophy underlying the use of readability formulas, stated the belief that the idea behind readability measurement was the matching of reader and printed material. This matching makes two basic assumptions: (1) that readers differ in their ability to read; and (2) that the printed material varies in turn in

readability (i.e. varies in the amount and kind of ability needed to read and understand it). Carrying this idea further she stated:

Suitable matching is essentially a problem of prediction and control. It implies that the teacher or author knows something about factors that make for ease and difficulty, how these factors can be measured, and how they can be related to the abilities of the numerous readers. (7:90)

Klare, in defining the readability formula wrote:

. . . a readability formula is a method of estimating the probable success a reader will have in reading and understanding a piece of writing. It is predictive in the sense that it provides an estimate of the difficulty for the writing without requiring the reader to read it and undergo tests on it. In other words, it provides the kind of information about readability that a writer or teacher would have to judge through experience, or measure through a reading test. (22:34)

Validity of Readability Formula Estimates

In utilizing any instrument such as readability formulas, validity must be considered. Chall listed three sources of information relative to validity of readability formulas. These were: (1) the original studies used in the development of the formulas; (2) cross-validation studies in which formulas are compared to other formulas and outside criteria; and (3) experimental validation in which certain factors influencing readability were analyzed in a controlled experiment. (9:69)

Discussing the original studies, Chall stated:

The readability formulas giving the most clear-cut evidence of validity are those based upon correlation with criteria graded independently by comprehension

tests: Dale-Tyler, Gray-Leary, Lorge (1939 and 1948).
Flesch (1943, 1948, and 1950), and Dale-Chall . . .
(9:71)

Nearly all the readability formulas were developed with reference to an outside criterion of difficulty. Klare stated that the "most used and most adequate of the available criteria for the construction of readability formulas" was the McCall-Crabbs' Standard Test Lessons in Reading. (22:32) These were reading lessons developed with test questions for different grade levels.

In a study by Inskeep, the Dale-Chall and Spache formulas were validated against the comprehension scores of children and the estimates of teacher judgment of the readability level of ten selected pieces of material. He reported that:

. . . The means of the teacher estimates of readability and formula computed estimates of readability correlated .9515, in ranking the ten selections in order of difficulty.

. . . The means of the teacher estimates of readability and the level of difficulty indicated by children's comprehension scores correlated .8545 in ranking the ten selections in order of difficulty.

. . . The formula computed estimates of readability and difficulty level shown by children's comprehension scores correlated .8424, in ranking the ten selections in order of difficulty. (17:105-106)

Another cross-validation study utilizing expert judgment as the outside criteria was conducted by Fussell and Fea. In this study six readability formulas (Dale-Chall, Flesch, Lewerence, Lorge, Winnetka, and Yoakam) were compared to the Children's Catalog ratings and the mean of librarian's

ratings. Individual formula estimates tended to be higher than the mean of the librarian's estimates for most of the books. However, the mean of the six formula estimates for all books surveyed in this study tended to be fairly close to the mean of the librarian's estimates for all books in the study. (40)

The results of experimental validity studies using reading comprehension (or retention) criteria have tended to be slightly positive. Klare has noted that of those studies done after 1946, in which readability as a whole (presumably both words and sentences) was varied or measured, the trend was toward a positive correlation. (22:134) Klare reviewed and discussed twenty-two such studies, and summarized the results as follows:

. . . A conservative interpretation would be that readability formula scores are related to, and can be used to predict comprehension and retention under proper conditions, . . . (22:135)

Reliability of Readability Formula Estimates

The problem of reliability of readability measurement is a threefold one which concerns analyst, sampling, and formula to formula reliability.

Very little has been done to test analyst to analyst reliability to date. Chall cited the two studies conducted by Hayes, Jenkins and Walker in this area. On the first study they used the Flesch revised formula (1948) with two experienced analysts and two inexperienced analysts. The

second study used only inexperienced analysts (graduate students). Chall summarized the results of these two studies as follows:

1. Analyst-to-analyst reliability on word length, sentence length, and reading ease is fairly high for the kinds of materials used in this study.
2. Analyst-to-analyst reliability on personal words is fair, but on personal sentences (and as a result, on human interest) is lower than ordinarily might be considered desirable.
3. For practical purposes, the Flesch formulas and the directions for their use are sufficiently objective to be used even by inexperienced analysts to obtain estimates of the reading ease and human interest of written material. (9:58-60)

Klare reviewed ten studies done on sampling size and concluded:

Thus it is quite apparent from the sampling studies that no single sample size can be considered best for all situations . . . While no user of formulas would want to add deliberate error to formula scores, . . . increased and more precise sampling alone can never entirely eliminate inaccuracy in formula predictions. No formula, even under the most favorable of sampling conditions, is a perfect predictor of readability. (22:106)

Nyman, Kearl, and Powers attempted to shorten the word list used with the Dale-Chall formula reasoning that the greatest block to the use of the formula was the necessity of referring to the list of 3,000 words in determining the vocabulary of a piece of writing. They used only the Dale words which were also among the 1,037 most frequent Thorndike-Lorge (46) words ("AA" group). They then developed a readability formula for the new word list (920 words) and regression statistics were applied to the McCall-Crabbs graded test passages in reading to provide the criterion. The

recalculated formula had lower predictive power and a larger error term on the McCall-Crabbs passages than the "original" Dale-Chall formula. The authors concluded that ". . . this attempt at shortening the Dale list proved unsuccessful: the loss in precision and predictive power was too great." (32)

Reliability of estimate where several readability formulas have been used for the same material was discussed in the studies having to do with cross-validation. Klare discussed it in respect to many of the studies which he reviewed in his book, in the chapter dealing with "Validity." (22:121-156) There was usually a difference (in some cases of considerable magnitude) in the results obtained by different formulas. Nearly all of the research has borne out this finding.

Limitations of Formulas

Bormuth (4:429) believes that the formulas presently available for use by educators are too inaccurate to permit their use in selecting instructional materials. He believes that while it may be possible to construct highly valid formulas, such formulas are still in the developmental stage.

Fry (14:513) reports that many educators, librarians, and some publishers believe that it takes too much time to apply a readability formula to a piece of material.

Many investigators find fault with readability

formulas because they do not measure all aspects of the problem. Some of the unmeasured factors are: the reading ability of the reader, his interests, his intelligence, maturity, experiential background, or his motivation. (11:25)

Finally it is pointed out that the typographical aspects of the materials, as well as the style of writing have gone "unchecked". (11:20-23) Nor do readability formulas evaluate the other factors like conceptual difficulty or the way in which the material is organized. (25:91)

Despite the differences reported in reliability of estimate, (and the misgivings of some persons), Klare pointed out that:

. . . a look at summary figures can be useful in the attempt to answer the questions of when a formula will and will not work, and why . . . uses of the term "readability" are restricted to an analysis of style difficulty. The overall results are predominantly positive, with over twice as many cases judged positive as negative. If the further restriction is made that only modern studies be included (those appearing in 1946 and after) the results are even more clearcut: 35 positive, 9 negative, and 9 indeterminate. (22:155-156)

Smith, speaking before the Tenth Annual Conference on Reading at the University of Pittsburgh in 1954, stated the case for the use of readability formulas, despite their limitations, when she averred:

Some day we may be able to say that a given piece of material is suitable for a certain group of readers and have this statement encompass all the possible factors that contribute to readability. At the present time we can only say that a book is readable on the basis of such and such a criterion, taking only certain factors into consideration. Until better devices are available we have to be satisfied with what we have.

We can use the formulas which have been already developed as a clue as to whether we are satisfying by our selection of textbooks a large proportion of a group of readers at a particular level or grade. (42:24-25)

Need for Readability Estimates

Wood stated the general principal behind readability research, if not all educational research:

In recognition of the human growth principle, individual differences have for many years had a profound effect on educational theory and practice. In seeking to meet the varying needs of the many different personalities found in the classroom, educators have long sought to find materials suitable to the needs and abilities of the pupils. With so much of learning activities being dependent on reading skills of the children, several reading formulas have been developed to find suitable teaching materials for the children to read. (47:214)

Yoakam, who had long worked in the area of the readability level of textbooks, stated that textbooks published during the 1920's and 1930's were seriously overgraded for the children for whom they were written. This was particularly true in the area of elementary school readers. To support this contention he cited comparative studies done by himself and his students which showed that a sample of reading texts published between 1930 and 1939 had a readability level an average of 1.3 grades higher than the publisher's grade placement, while a similar sample of texts published between 1940 and 1945 had an average readability level only .6 grade higher. Yoakam noted that, based upon his and his students' research during the 1950-1954 periods, authors and publishers had become more aware

of the problem, and that a noticeable change in the readability of textbooks had taken place. However, he noted that ". . . school geographies and histories still tend to be difficult." (48:21-22; 49)

Research in readability, with its multitudinous formulas, has still been welcomed by educators and librarians because they still desire to put "the right book in the hands of the right reader." (11:19)

It has been contended, and still holds true, that reading is still the principal vehicle whereby people gain their information and enjoyment. The effectiveness by which books, newspapers, and magazines convey information is still of tremendous importance. (11:19)

Some problems faced by educators and inherent in the need for better readability are:

1. Reading is becoming increasingly more important in a child's education.
2. A stronger coordination needs to be developed between instructional materials and the reading process.
3. Teachers need to find new and exciting ways to interest children in reading.
4. Environmental and economic problems have contributed to making the problem of readability more serious. (3:440-441)

While Betts identified the above problems nearly 25 years ago, they are still with us today. Symyrozum stated:

Textbooks today seem to be the most uninteresting reading material available. Many seem to be written from a strictly factual point of view and are written in the easiest manner for the author. This does not mean the material will be easy reading. Many textbooks merely present the information from a factual point of view. The better students have a higher tolerance and can function within the framework, but the poorer students who cannot cope with the material become frustrated. (44:43)

The readability formulas now in existence may help educators and other to "fill this gap" and provide another tool for use in the evaluation of books and other teaching material. If the obstacle of placing materials that are too difficult to be read by the children can be overcome our society will benefit in the future.

The Dale-Chall Formula

The Dale-Chall readability formula was developed by the authors in the course of their work at The Ohio State University and was first published in 1948. (10)

The Dale-Chall formula is a two factor formula, based upon the percentage of unfamiliar words (Dale Score - words not appearing on the list of 3,000 words), and average sentence length. The formula was developed by determining the relative number of words in the McCall-Crabbs test lessons not contained on the Dale list of 3,000 words. The readability level was determined by equating the formula score with the test results of school pupils who could answer one-half of the test questions used in the McCall-Crabbs series. The multiple correlation coefficient of the two

factors (Dale Score and average sentence length) with the criterion measure (reading grade score of pupil who could answer one-half of the test questions correctly) is .70.

(10:6-10)

The Dale-Chall formula is expressed as:

$$X_{C_{50}} = .1579X_1 + .0496X_2 + 3.6365$$

when $X_{C_{50}}$ = reading grade score of a pupil who could answer one-half of the test questions correctly

X_1 = Dale Score (relative number of words outside Dale list of 3,000 words)

X_2 = average sentence length

3.6365 = constant (10:7)

Klare has stated that the Dale-Chall formula is considered the most accurate of all existing formulas and that it has a wide range of applicability. (22:22-23)

Despite the disparity in the data concerning the results of the application of readability formulas, in general, Klare drew the following conclusions regarding the Dale-Chall formula:

1. In the available studies, the Dale-Chall and Flesch Reading Ease formulas provide the most consistently comparable results in terms of both correlational and grade placement data.
2. The Washburn-Morphett formula tends to yield higher grade levels, and the Lewerenz formula lower grade levels, than the Dale-Chall or Flesch formulas. . . .
3. More of the high intercorrelations have involved Dale-Chall scores than those of any other formula, relative to the number of comparisons made. (22:120)

Future Role of the Textbook

Authors continue to examine the role of the textbook of the role in a social studies program. Most urge the teacher to train and reexamine their teaching techniques, yet they do recognize the continued "central role" of the basic text in the social studies program.

Gibson stated:

As the "old reliable" of education, the textbook is and will probably continue to be for some time a standard organizational device for a social studies program and for student learning. In the primary grades, a variety of social studies textbooks are used in many classrooms, although at the intermediate and secondary levels, one basic book for each course remains the traditional approach. . . . (15:176)

Jarolimek is hopeful, yet still somewhat pessimistic, when he stated:

Educators agree that if properly used the textbook is a valuable aid to learning. On the other hand, everyone familiar with school practice recognizes that the misuse of textbooks is fairly common. Attention is called particularly to the malpractice of expecting children who are known to vary markedly in reading and intellectual ability to use identical textbooks for identical purposes. . . . Basic textbooks in the social studies are likely to be widely used for years to come, . . . (18:117-118)

Ploghoft and Shuster are no less pessimistic:

Traditionally, the textbook has been the basis of the social studies curriculum, particularly at the intermediate grade level. . . . It is assumed here that textbooks will continue to be used in most classrooms until teachers are trained in the techniques suggested throughout this text. . . . (35:249)

Finally, Preston cites research which he believes is still valid which shows that the use of the basic textbook is still far more common at the intermediate grade level. (36:255)

Summary

This chapter has been devoted to a review of related literature in order to provide a background of information and also a rationale for the present study.

Educators have been concerned with the readability level of materials for a considerable period of time. From the time of the first McGuffey readers vocabulary control has been a factor in the production of educational materials. The first readability formulas were developed in the early 1920's and these formulas have been constantly improved since that time. The literature reviewed indicated that the Dale-Chall formula is considered the most accurate and widely used of these formulas. Readability formulas do give an approximation of the grade level difficulty of materials. These formulas have been used to judge the reading difficulty of many types of materials, as well as materials directly associated with education. Many studies have been conducted on the readability of textbooks. Several studies have been conducted on the readability of social studies textbooks.

CHAPTER III

DESIGN OF THE STUDY

The purposes of this chapter were to describe:

(1) the methods of collecting the materials studied; (2) the treatment of the source materials; and (3) the statistical analysis of the data.

Collection of Material

Texts were obtained as listed on the "adopted list" of the Textbook Commission of the Indiana State Board of Education, in the field of Social Studies. These texts were adopted on December 12, 1968 for a period of five years beginning July 1, 1969.

Texts studied were from the list designated Grade 4, Grade 5, Grade 6 - Latin America, and Grade 6 - Western Europe.

Treatment of Source Materials

Each textbook from the list was analyzed for its readability level utilizing the Dale-Chall formula for estimating the readability level of written materials.(10)

Sampling procedure. The procedure used in selecting samples in each book was that described by Dale and Chall:

- I. Selecting Samples:
Take approximately 100 words about every tenth page for books. (10:11)

The individual pages analyzed were selected in the

following manner:

1. A table of random numbers was consulted in order to determine on what page the sample was to be taken. (38)

2. Other pages in the individual samples were determined by adding 10 to the number chosen. This was done throughout the book. If a page was found to be unsuitable, due to the nature of the material (i.e. maps, illustrations, charts, etc.), then the page preceeding or following the selected page was used. In very few cases was the page analyzed more than one page removed from the originally selected page.

After the pages were chosen copies of these pages were made and samples of approximately one-hundred words were counted. Page samples were begun at the top, middle, and bottom of pages chosen. Exceptions were made in cases where pages contained less than 150 words per page (i.e. charts, illustrations).

Readability level: The Dale-Chall formula was then applied to the samples of the materials chosen. Interpolated grade levels were calculated for each individual sample within a given piece of material as well as the final grade placement.

The reader is here cautioned to utilize the interpolated grade levels with caution. They were calculated for better internal use within this study and were not intended to be highly definitive. It is believed that

they can be used with a ± 1.0 factor.

Analysis of Data

The data from the analysis of readability were tabulated and reported as: (1) readability level of each sample and each book; (2) range of readability level within samples; (3) per cent of individual samples which were above, at, and below the assigned grade level of the book. In addition histograms were constructed for the per cent of samples above, at and below the assigned grade level and profile graphs were constructed to show sampling variability within books.

Readability level of books. The readability level of each book, as determined by the use of the Dale-Chall formula, was reported by grade level, interpolated to the nearest tenth.

Range of grade placement. The range of grade levels within books analyzed was reported. The range was calculated as one plus the difference between the two extreme scores of the distribution, except where the lowest score was reported as -4.0. As this is an indeterminate measure of difficulty the "plus one" factor was not added.

Per cent of samples at, above, and below assigned grade level. This interpretation of the data was made to counteract the possible effect of one or more extreme scores on the mean readability level. For computational purposes

readability levels interpolated between whole grade levels were considered as being at the assigned grade level (i.e. grade level 5.0 - 6.0 was considered as being at the fifth grade level).

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purposes of this chapter were to present the data relating to the readability level of the selected intermediate grade level social studies textbooks studied. This analysis is presented by assigned grade level, by text.

Grade Four - Indiana History

Examination of the data presented in Table 1 reveals that all three adopted textbooks are above the grade level for which they are intended, when considered by the estimated readability level of the materials. Two of the three texts have ranges of grade levels in excess of five full years. All texts have grade levels above the assigned grade level in excess of 80 per cent of the samples.

Living Indiana History (I-1). The mean readability level of this is the sixth grade. It is a minimum of one grade level too difficult for the children for whom it is intended. It has a range of grade levels, within samples, for four years. Eight-eight per cent of the samples were above the grade level for which it was written. Complete data are presented in Table 5 and a profile graph of these data is presented in Figure 5.

Indiana Through the Years (I-2). The mean readability level of this text is at the second half of the sixth grade year. It is a minimum of one grade level too difficult for

TABLE 1. GRADE LEVEL, RANGE, AND PER CENT OF SAMPLES AT, ABOVE, AND BELOW STATE
GRADE PLACEMENT - GRADE 4 TEXTBOOKS

Title (Abbreviated)	Bibl. Ref.	Head. Lvl.	Grade Lvl. Distr.		% Sample / Grade Level	
			High	Low	Above	At Below
<u>Living Indiana Hist.</u>	I-1	6.0	8.2	-4.0	4.2	88 6 6
<u>Indiana Thr./Years</u>	I-2	6.6	11.3	5.0	6.4	100 0 0
<u>Indiana Adventure</u>	I-3	6.7	11.5	4.5	7.1	91 9 0

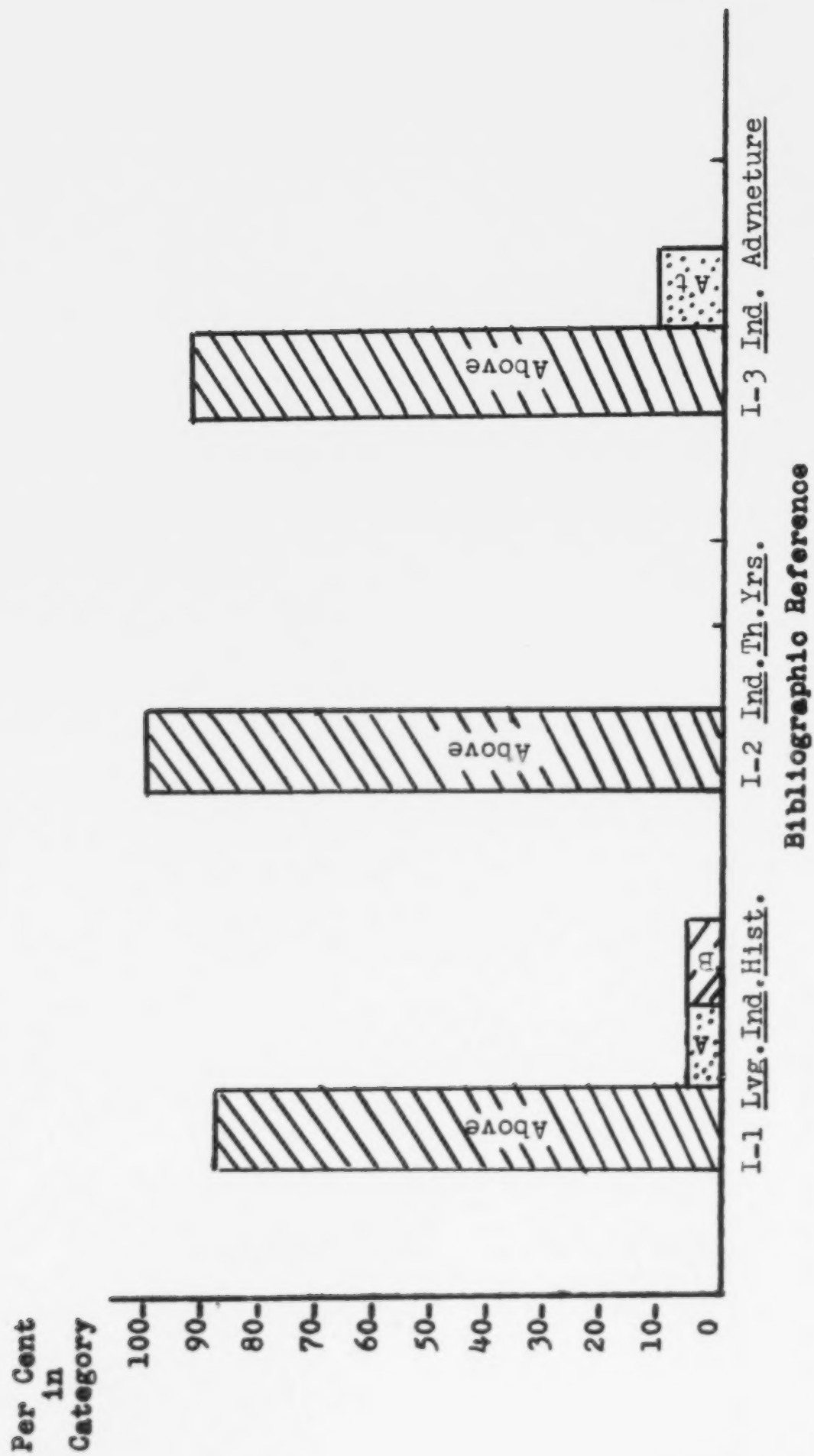


Figure 1. Per Cent of Samples in Grade 4 Textbooks - Indiana History - Falling Above, At, and Below Assigned Grade Level in Readability Formula Estimate

the assigned grade level. The range of sampling readability levels is in excess of six years. Caution should be exercised in interpretation of the data because of the small number of samples (ten). All samples, however, did fall above the assigned grade level. Complete data are presented in Table 6 and a profile graph is presented in Figure 6.

Indiana Adventure (I-3). The mean readability level of this text is approximately one and one half years too difficult for the readers who are using it. It is the most variable when the range of readability of the samples is considered, the range being in excess of seven years. Over 90 per cent of the samples exceeded the grade level for which it is intended. Table 7 presents the complete data and Figure 7 is a profile graph of these data.

Grade Five - The United States

Examination of the data presented in Table 2 shows that one text falls below the readability level of the grade for which it is intended, one is at the level, and five are above level. All of the five that are above the readability level are not a great deal above level. The range of readability levels within samples is from two years to over seven years, and with one exception the rank ordering of the ranges of differences is the same as the means of the readability scores of the books. The per cent of samples above and below the assigned grade levels of the

TABLE 2. GRADE LEVEL, RANGE, AND PER CENT OF SAMPLES AT, ABOVE, AND BELOW STATE
GRADE PLACEMENT - GRADE 5 TEXTBOOKS

Title (Abbreviated)	Bibl. Ref.	Read. Lvl.	Grade Lvl. Distr. High Low	% Sample / Above At Below
<u>This Is Our Land</u>	I-9	4.7	6.2 -4.0 2.2	6 28 66
<u>The U.S. & Canada</u>	I-4	5.6	8.9 -4.0 4.9	23 49 28
<u>Know./Neigh/U.S.& Can.</u>	I-5	6.1	8.9 -4.0 4.9	49 35 16
<u>In Th. U.S. & Canada</u>	I-10	6.1	9.4 -4.0 5.4	47 33 20
<u>Under. Yr. Count.& Can</u>	I-6	6.1	10.1 4.2 6.0	49 31 20
<u>The Chng. New wrld:</u>	I-8	6.2	9.1 4.1 5.1	57 33 10
<u>Expl. Rgns./West.Hem.</u>	I-7	6.4	11.1 -4.0 7.1	50 36 14

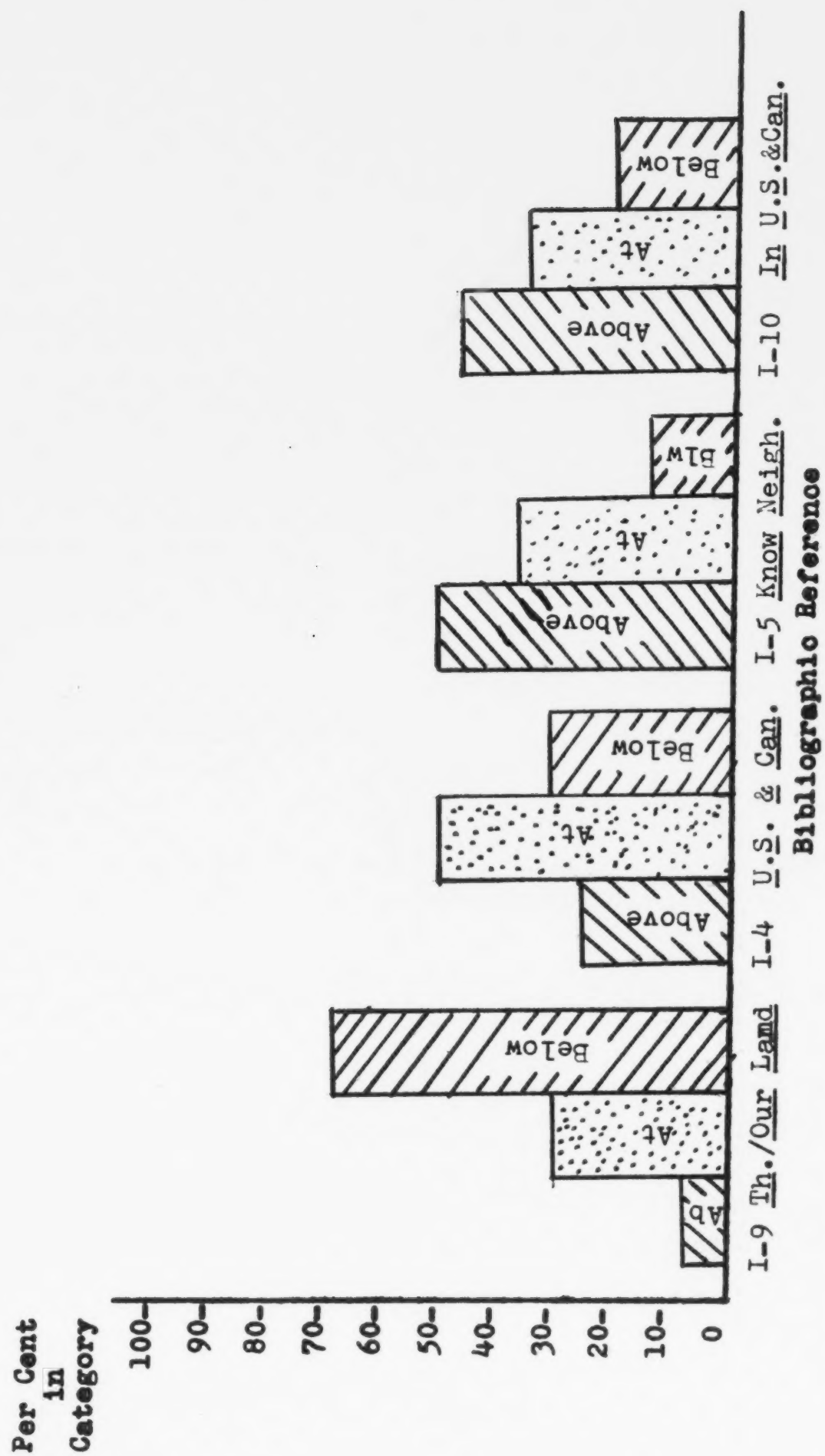
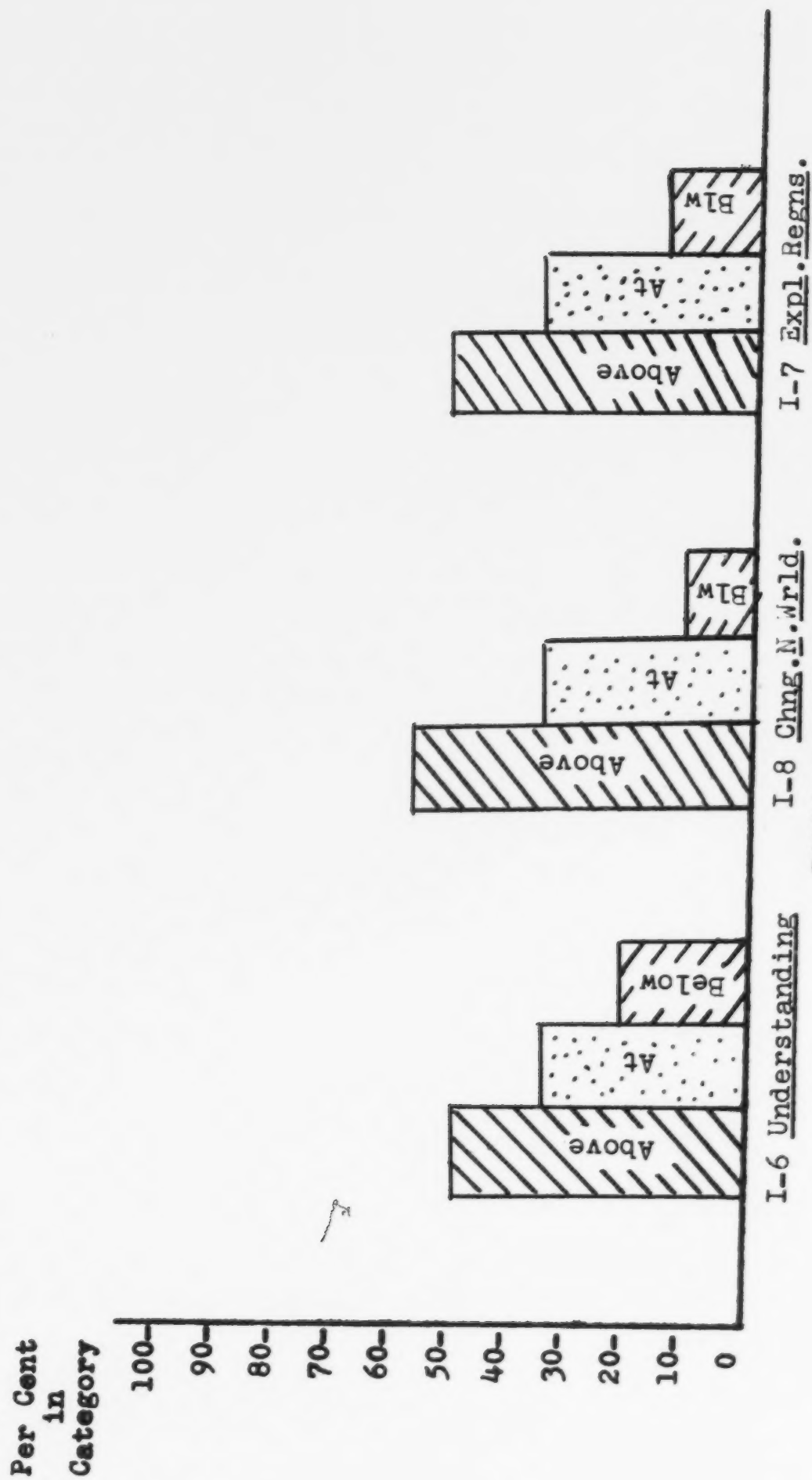


Figure 2. Per Cent of Samples in Grade 5 Textbooks Falling Above, At, and Below Assigned Grade Level in Readability Formula Estimate



Bibliographic Reference
Figure 2 (continued)

texts is also in approximately the same order, when compared with the mean readability levels of the texts. Data are presented in Table 2 and Figure 2.

The United States and Canada (I-4). This text is written in two parts. The mean of the section dealing with the United States is 5.3 while that section dealing with Canada is 6.9. The overall mean is 5.6. Table 8 presents these data while Figure 8 is a profile graph of the same data.

Knowing Our Neighbors in the United States and Canada (I-5). This text too is written in two parts. The mean of the section dealing with the United States is 6.3 while that dealing with Canada is 5.4. The mean readability level of the entire book is 6.1, with a range of nearly five years. Complete data are presented in Table 9, while Figure 9 presents a profile graph of the same data.

Understanding Your Country and Canada (I-6). This text has an overall readability average of 6.1 with a range of six years. Complete data are presented in Table 10, and Figure 10 is a profile graph depicting the data contained in Table 10.

Exploring Regions of the Western Hemisphere (I-7). Of all of the texts examined at the fifth grade level this book has the highest mean readability level (6.4) and also the greatest range of scores among the samples (7.1). Complete data concerning the samples in this text are

presented in Table 11 as well as a profile graph in Figure 11.

The Changing New World: United States and Canada (I-8). The readability level of this book is at 6.2 with a five year range of scores among the samples. It has the highest per cent (57) of scores above the assigned grade level of the seven texts examined. Data for this text are presented in Table 12 as well as the profile graph of the data in Figure 12.

This is Our Land (I-9). The readability level of this textbook is below that of the grade level at which it is used (4.7) and is also lowest of all of the adopted texts. In addition it has the smallest range of scores (2.2) and the lowest per cent of samples above the assigned grade level. Complete data are presented in Table 13 and Figure 13.

In These United States and Canada (I-10). The readability level of this text is slightly above the assigned grade level. The data relative to range of sample scores and per cent of samples above and below assigned grade level place it approximately in the middle of the books examined. Data dealing with this text are presented in Table 14 and Figure 14 is a profile graph of the same data.

Grade Six - Latin America

Examination of the data presented in Table 3 reveals that five of the seven texts in this area are at the assigned

grade level, when considered by readability formula estimate. One text is slightly above grade level (less than one full grade level) while one text appears to be seriously over-graded. The ranges of grade levels of the samples is between three and six years for the texts studied. The percent of texts with samples above and below the assigned grade levels is in approximately the same rank order as the mean readability scores of the books. These data are completely presented in Table 3 and Figure 3.

Latin America (I-11). This text is well above the readability level of the students for whom it is intended (8.6). This serious overgrading may be a function of the small number of samples (5), yet only one sample fell within the assigned grade level while three were at least three grade levels too difficult. Complete data and a profile graph are presented in Table 15 and Figure 15.

Knowing Our Neighbors in Latin America (I-12). The mean readability of this text is estimated at 6.2, which makes it the second in rank order of "ease" as ranked by the formula. Complete data are presented in Table 16 while Figure 16 is a profile graph of the same data.

Living as American Neighbors (I-13). This textbook has the lowest estimated readability level of all of the seven texts examined in this category. It also has the smallest range of sample scores as well as the lowest percent of scores above the assigned grade level. Complete

TABLE 3. GRADE LEVEL, RANGE, AND PER CENT OF SAMPLES AT, ABOVE, AND BELOW STATE
GRADE PLACEMENT - GRADE 6 TEXTBOOKS - LATIN AMERICA

Title (Abbreviated)	Bibl. Ref.	Read. Lvl.	Grade Lvl. Distr.		Sample / Grade Level	
			High	Low	Above	At Below
<u>Lvg. as Am. Neigh.</u>	I-13	6.0	8.7	-4.0	4.7	15 38 47
<u>Know. Neigh./L.A.</u>	I-12	6.2	9.6	-4.0	5.6	20 30 50
<u>Lrng. About L. A.</u>	I-14	6.6	9.0	-4.0	5.0	34 28 38
<u>Under. Latin Am.</u>	I-16	6.6	10.0	-4.0	6.0	33 38 29
<u>In Lat. Am. Lands</u>	I-17	7.0	10.7	4.6	6.2	41 26 33
<u>Expl. Bg./L.A. & Can.</u>	I-15	7.6	12.3	5.3	7.1	59 28 13
<u>Latin America</u>	I-11	8.6	9.9	6.6	3.4	80 20 0

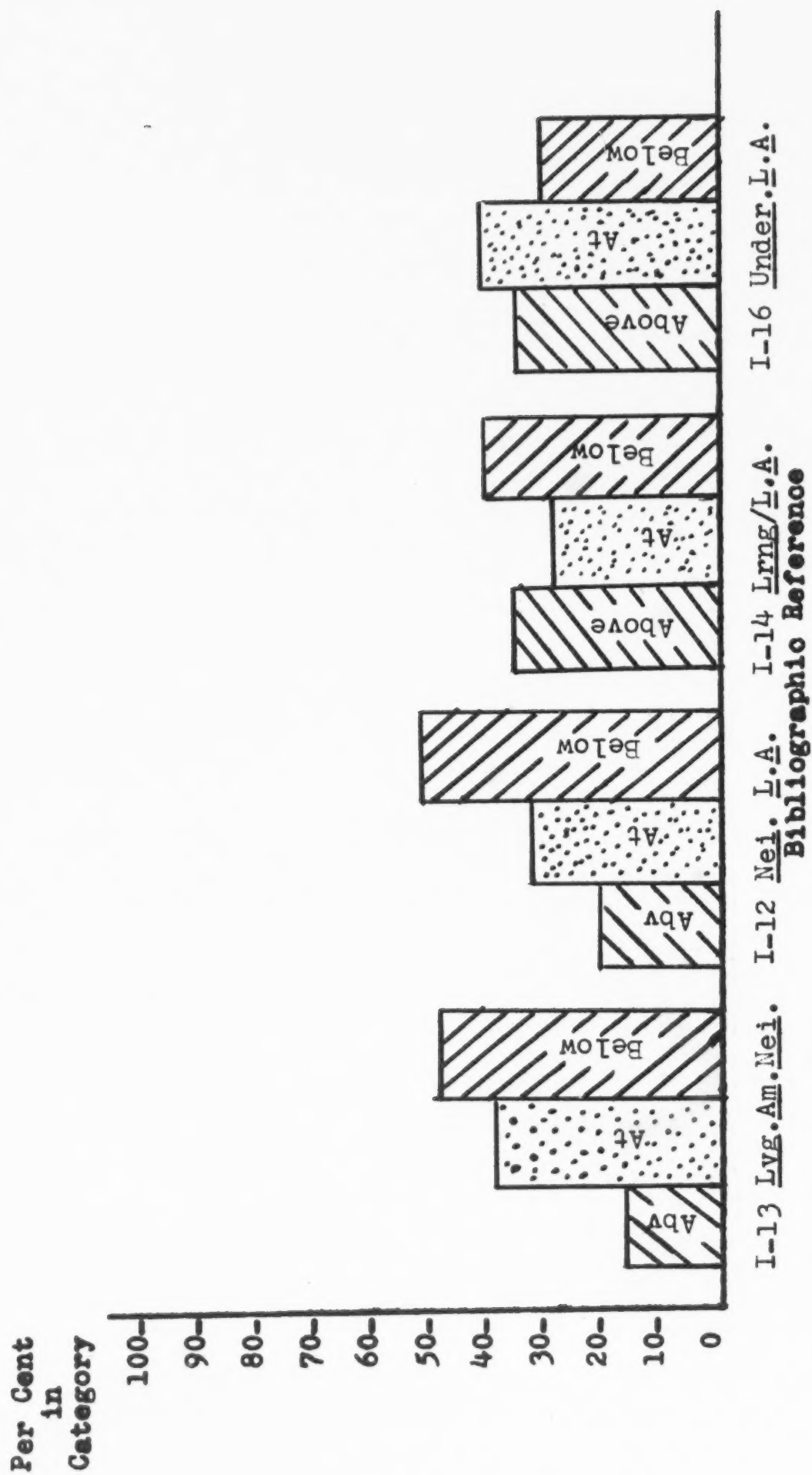


Figure 3. Per Cent of Samples in Grade 6 Textbooks - Latin America - Falling Above, At, and Below Assigned Grade Level in Readability Formula Estimate

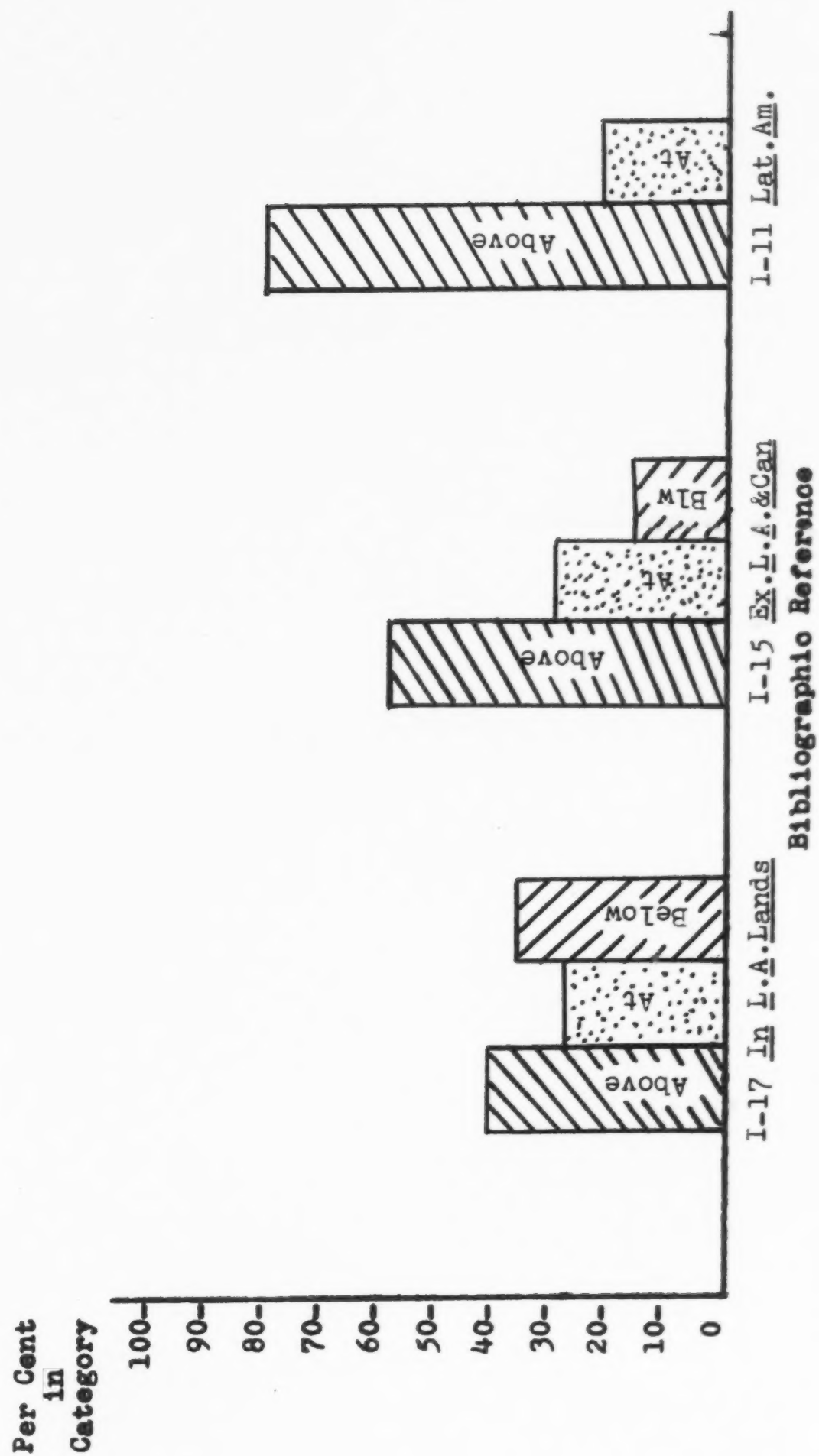


Figure 3 (continued)

data for this book will be found in Table 17 and a profile graph is presented in Figure 17.

Learning About Latin America (I-14). The measured readability level of this text places it at about the middle of the assigned grade level. The range of the measured scores is 5.0 years and the per cent of scores falling above and below the assigned grade level is approximately equal. Data are presented in Table 18 and a profile graph is also presented in Figure 18.

Exploring Regions of Latin America and Canada (I-15). This is one of the more difficult texts when considered by the estimated readability level of 7.6. It also had the widest range of readability samples, this being over seven years. Complete data are presented in Table 19 and a profile graph is presented in Figure 19.

Understanding Latin America (I-16). This textbook is in the "middle range" of difficulty when considered by estimated readability level, having a grade level of 6.6 years and a range of scores of 6.0 years. The per cent of scores lying above, at, and below grade level are fairly evenly distributed. Complete data regarding this text are presented in Table 20 while a profile graph of the same data is given in Figure 20.

In Latin American Lands (I-17). This text has an estimated readability level of 7.0 which places it at the upper level of difficulty for the grade level to which it

is assigned. The range of scores above and below the assigned grade level exceed those at the grade level with a range of six years between the "high" and "low" readability levels of the samples. Complete data are found in Table 21 and Figure 21 is a profile graph of the same data.

Grade Six - Western Europe

Examination of the data presented in Table 4 reveals that of the six texts adopted for use in the sixth grade social studies program, five are at or below grade level in readability while the sixth is approximately one-half year above grade level. The ranges of grade level among the various samples is from a high of over eight years to a low of approximately four and one-half years. The per cent of samples above and below grade level figures do not give as clear a picture in this category of text as did the same data in the other categories. Complete data on all texts in this area of study are presented in Table 4 and Figure 4.

Long Ago in the Old World (1-18). This text is the most difficult to read of all of the adopted texts, according to the estimate of reading difficulty made by the Dale-Chall formula. It also has the highest per cent of samples above grade level. Complete data on this textbook will be found in Table 22, while a profile graph of the same data is presented in Figure 22.

TABLE 4. GRADE LEVEL, RANGE, AND PER CENT OF SAMPLES AT, ABOVE, AND BELOW STATE
GRADE PLACEMENT - GRADE 6 TEXTBOOKS - WESTERN EUROPE

Title (Abbreviated)	Bibl. Ref.	Read. Lvl.	Grade Lvl. Distr.		Sample / Grade Level			
			High	Low	Above	At	Below	
The Great Adventure	I-23	5.7	9.2	-4.0	5.2	9	28	63
Eng. / Old World	I-19	6.4	9.2	4.1	5.2	23	48	29
Wld. Read./Am. Hist.	I-20	6.7	9.6	4.4	5.3	38	32	30
Engl. / Old World	I-22	6.7	12.0	-4.0	8.0	32	39	29
Europe & Mex. Un.	I-21	6.7	9.5	5.1	4.5	43	21	36
Eng. And / Old Wld.	I-18	7.6	11.1	4.6	6.6	69	14	17

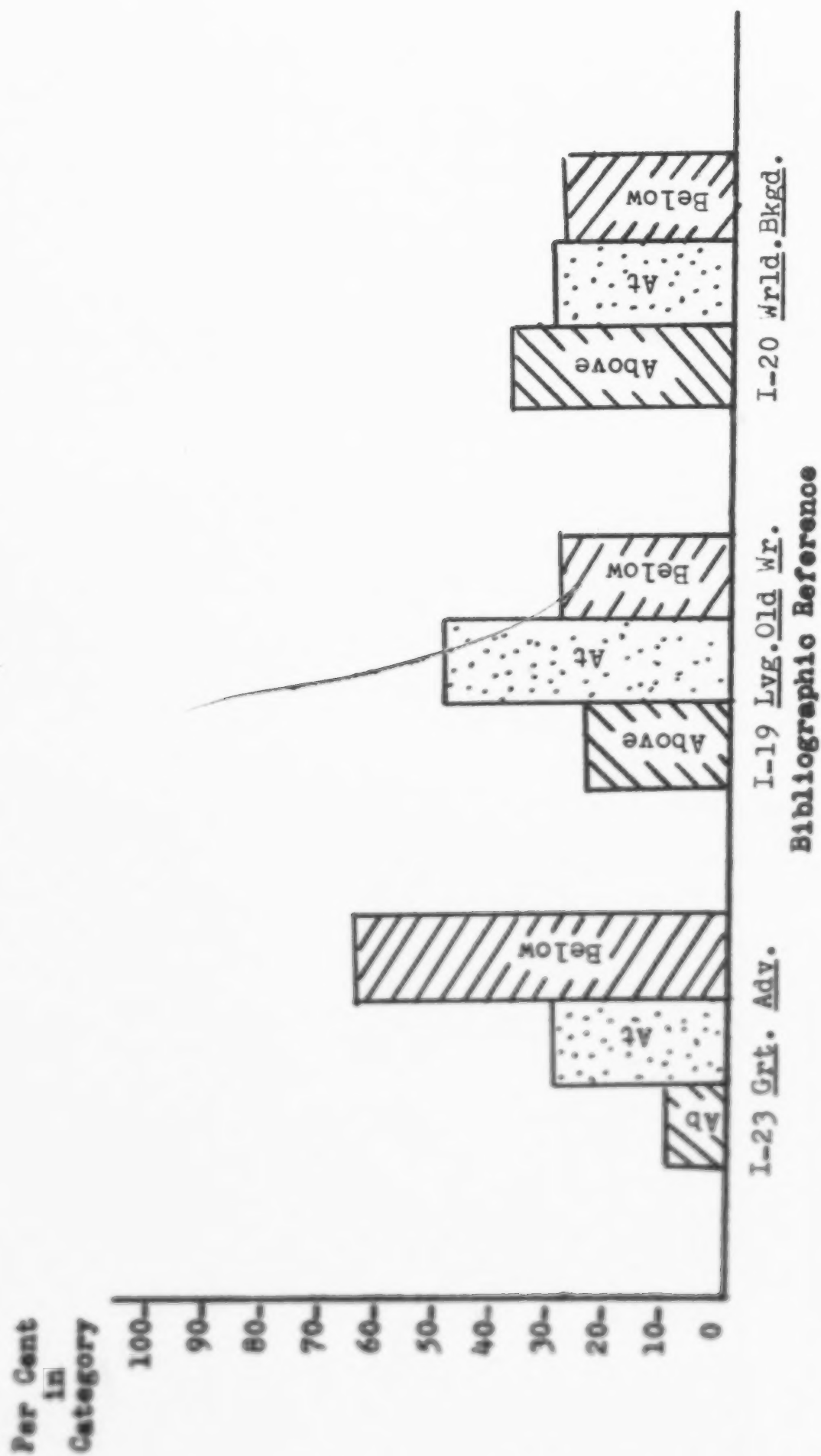


Figure 4. Per Cent of Samples in Grade 6 Textbooks - Western Europe - Falling Above, At, and Below Assigned Grade Level in Readability Formula Estimate

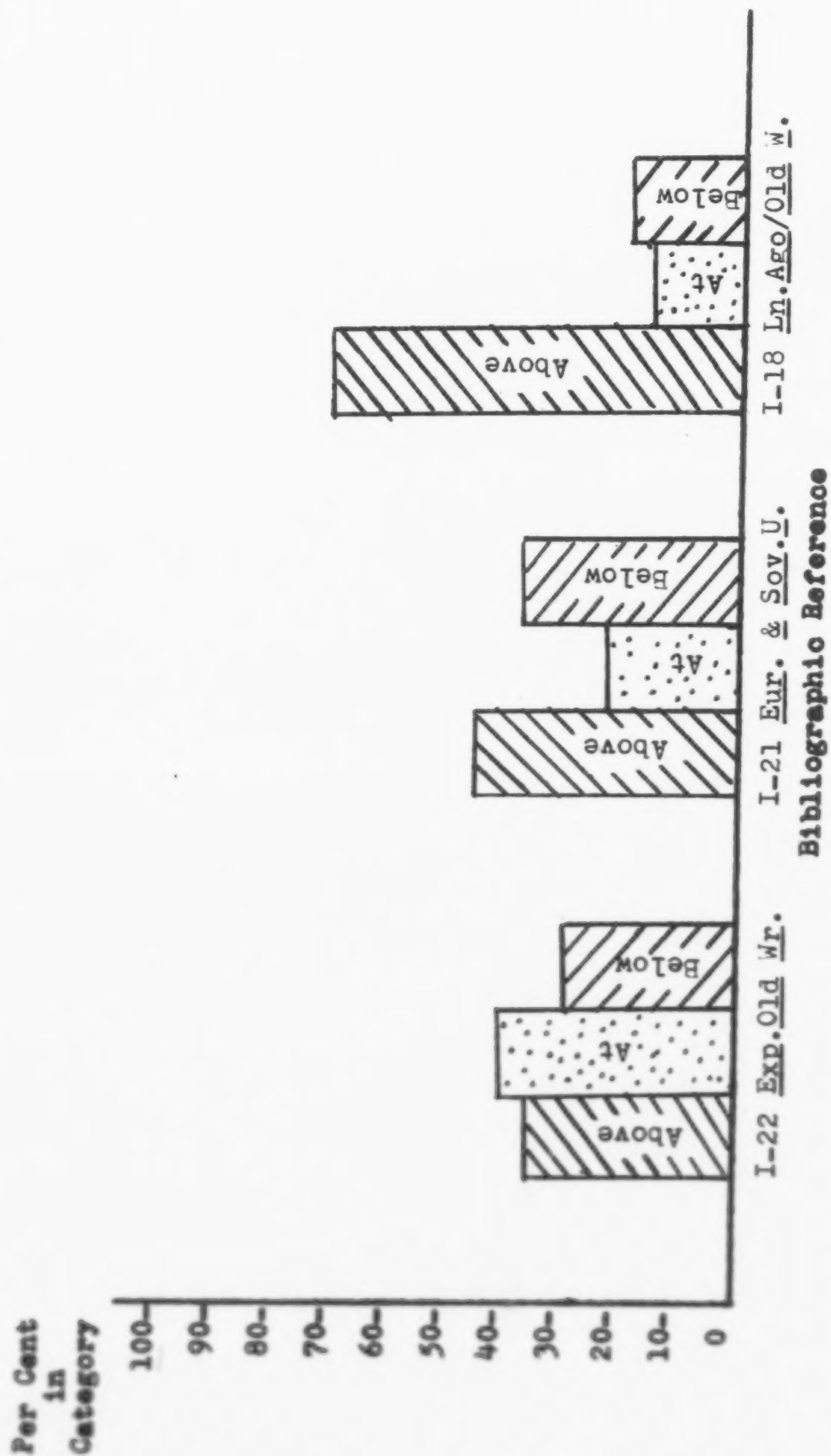


Figure 4 (continued)

Living in the Old World (I-19). This textbook has a measured readability level of 6.4 grade level, which places it at the approximate mid-point of graded difficulty of the level for which it is intended. The range of sample scores is approximately five years while an almost equal number of samples from this text are above and below the assigned grade level. Complete data are presented in Table 23 while Figure 23 is a profile graph of the same data.

World Background for American History (I-20). This is one of three texts in this category with a measured readability level of 6.7 grades. It is within the assigned level when considered by readability estimate of difficulty. Complete data are presented in Table 24 and Figure 24.

Europe and the Soviet Union (I-21). This text too has a measured readability level of 6.7 grades, yet of the three texts at this level it has the smallest range of scores having a range of only 4.5 grades between its highest and lowest sample. Complete data relating to the samples are presented in Table 25 and a profile graph of the same data is in Figure 25.

Exploring the Old World (I-22). This is the third text, of the six on the adopted list, with a measured readability level of 6.7. It also has the widest range of scores with the difference between the highest and lowest estimate being 8.0 years. Complete data are found in Table 26 and a profile garph in Figure 26.

The Great Adventure (I-23). This is the least difficult text to read, based upon estimated readability level, of all of those on the state textbook list in this particular category. Its readability level is placed at 5.7 which is below the grade level for which it is intended. The range of scores is at 5.2 while only 9 per cent of its samples are above grade level. Table 27 presents complete data on this book while Figure 27 presents the same data in profile graph form.

Summary

This chapter has presented the findings which were derived from the analyses of the data.

It was found that the texts at the fourth grade level were too difficult, when considered by their measured readability. Texts at the fifth grade level, while still tending to rank above the grade level for which they were intended, were relatively less difficult than those at grade four.

The textbooks assigned to the sixth grade level, when considered by estimated readability level, were, for the most part, at the grade level of difficulty for which they were being used.

CHAPTER V

SUMMARY, FINDINGS, AND CONCLUSIONS

This final chapter is presented in three parts. The first part restates the problem of the study, summarizes the salient positions of the literature and the results of related research, and outlines the procedures which were followed. The second section recapitulates the findings of this investigation. The third section states certain conclusions which were drawn from the findings and offers recommendations for further study.

Summary

The problem. The purpose of this study was to determine the readability level of all intermediate grade level social studies textbooks adopted by the Textbook Commission of the Indiana State Board of Education for the five year period beginning July 1, 1969. A total of 23 texts were examined and analyzed for their readability level utilizing the Dale-Chall readability formula.

Related literature. During the past one hundred years educators have been concerned with readability. This concern was illustrated by the graded McGuffey Readers which appeared in the 1840's and has continued through to today, with graded textbooks in all subjects now made available for purchase for use with children. Readability formulas appeared in the 1920's in an attempt to estimate the reading difficulty

of materials without having the user take a test on the material read or even actually reading the material. The literature reviewed indicated that the Dale-Chall readability formula is considered the most accurate and most widely used of the formulas in use today. Readability formulas do give an approximation of the grade level of difficulty of the materials. These formulas have been used to estimate the reading difficulty of many types of educational materials, as well as materials not directly associated with education.

Methodology. Social studies textbooks for the intermediate grade level as adopted by the Textbook Commission of the Indiana State Board of Education were studied to determine their estimated readability level.

Each textbook from the list, a total of 23 books, was analyzed for its readability level utilizing the Dale-Chall readability formula. The procedure utilized for selecting sample passages from the texts was that suggested by Dale and Chall, with such modifications as were deemed necessary and desirable for comparability. Interpolated grade levels were calculated for each sample as well as for the book as a whole.

Findings

The following findings, indicated by the results of the readability analyses, were reported:

1. All adopted textbooks for grade four are above the readability level for the children for whom they are

intended, when considered by the estimated readability as determined by formula estimate.

2. In the grade five texts one was below, one at grade level, and five were above the grade level, when considered by readability estimate, for which they were adopted.

3. Considering all grade six texts as a whole it was determined that the estimated readability level of the tests was as follows: (1) one text was below grade six level; (2) nine were within the grade level designate; (3) one text was above the grade level, but less than one full year; and (4) one text was well above the grade level for which it was intended.

Conclusions

Based upon the findings reported, the following conclusions were drawn:

1. Textbooks for Indiana History (grade four) should be carefully examined relative to their readability level. They are "overgraded" for the children for whom they are intended.

2. Textbooks, particularly at grade six, appear to be at or below the grade level of readability for the children who are now utilizing them.

3. No textbooks examined appear to be written with any idea of "progressive difficulty" in mind. This has particular implication for the teachers utilizing these materials as they may tend to assume that the first part of

of a book is "easier" to read than the last section. This assumption is simply not borne out in fact.

4. That even though the "average" readability estimate of a book may be at or below the grade level for which it is intended this does not mean, nor can it be assumed, that all sections of the book are at or below grade level. There is a wide range of reading difficulty within each text.

Recommendations for further study. Based upon the data collected and studied in this study the following recommendations are made for further study:

1. That the Textbook Commission of the Indiana State Board of Education examine carefully the readability level of all books before their adoption.

2. That further examination and refinement of readability formula estimates be made.

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APPENDIX A

Individual Data and Profile Graphs

TABLE 5. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LIVING INDIANA HISTORY - GRADE 4 TEXTBOOK (I-1)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	7	4.50	-4.0	11.	107	5.12	5.2
2.	17	5.74	6.4	12.	118	5.45	5.9
3.	27	5.44	5.8	13.	127	5.33	5.6
4.	38	4.76	4.5	14.	137	5.80	6.6
5.	47	5.45	5.9	15.	148	6.42	7.8
6.	58	5.44	5.8	16.	157	5.86	6.7
7.	67	5.49	5.9	17.	167	5.32	5.6
8.	77	6.60	8.2				
9.	87	5.39	5.7				
10.	97	5.39	5.7				

Average raw score of 17 samples = 5.50 Grade Equivalent 6.0

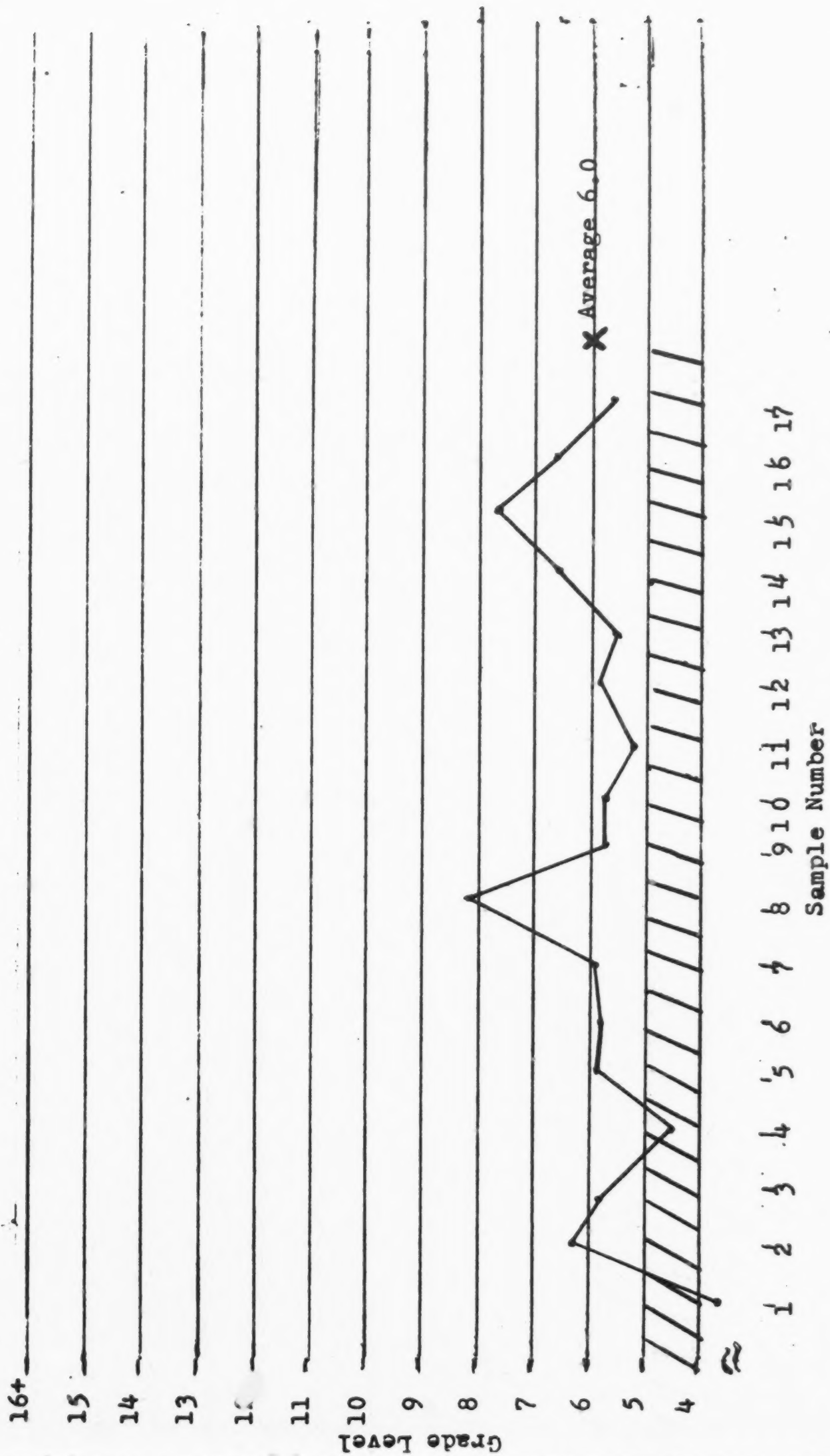


Figure 5. Grade Equivalents of Living Indiana History - Grade 4 Textbook (1-1)

**TABLE 6. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF INDIANA THROUGH THE YEARS - GRADE 4 TEXTBOOK (I-2)**

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	8	5.49	5.9	6.	59	5.33	5.6
2.	18	5.12	5.2	7.	68	5.01	5.0
3.	28	5.68	6.3	8.	78	7.06	9.1
4.	39	5.49	5.9	9.	88	8.15	11.3
5.	48	5.20	5.4	10.	99	5.80	6.6
Average raw score of 10 samples = 5.83 Grade Equivalent 6.6							

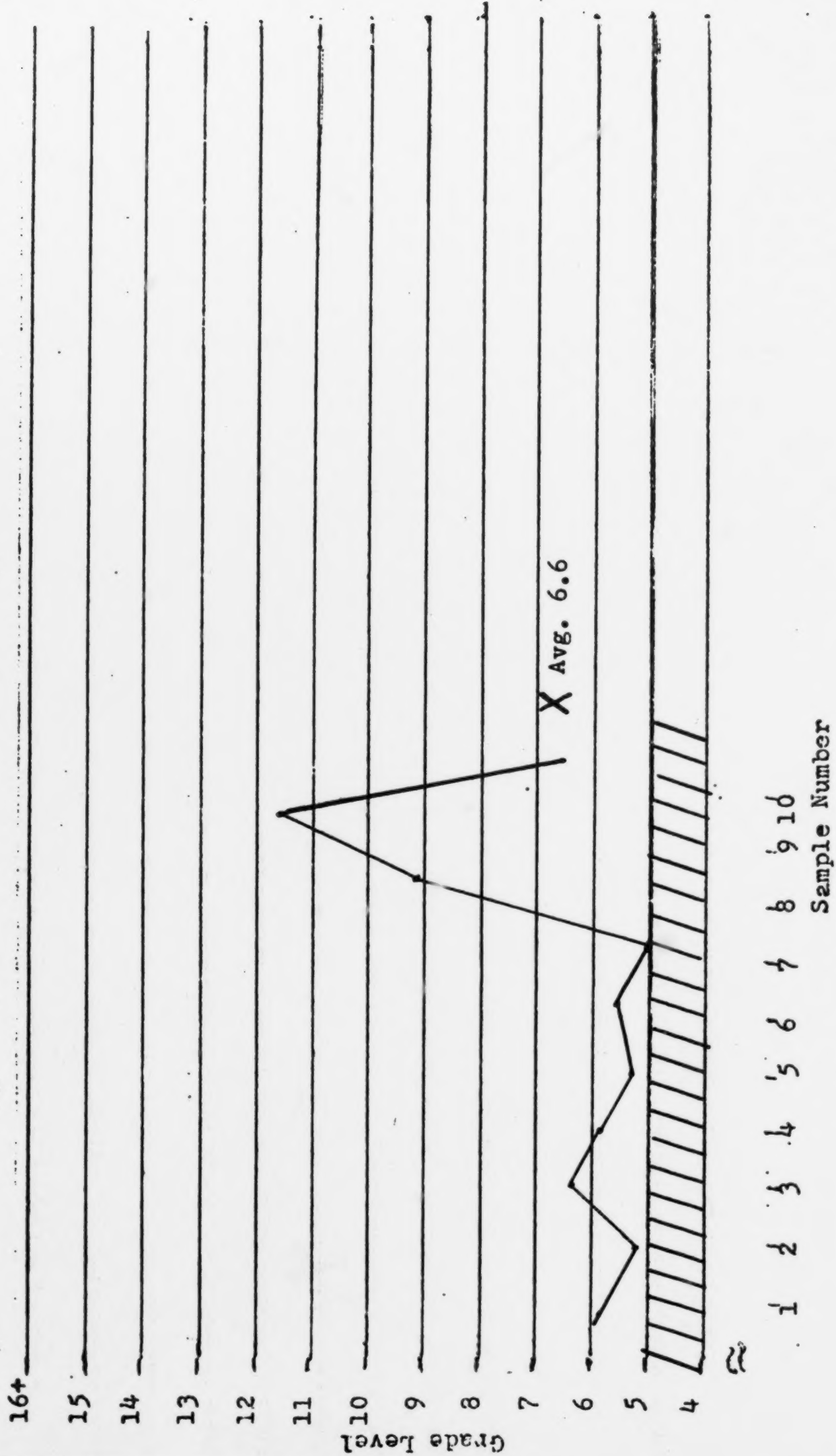


Figure 6. Grade Equivalent of Indiana Through the Years - Grade 4 Textbook (I-2)

TABLE 7. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF INDIANA ADVENTURE - GRADE 4 TEXTBOOK (I-3)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	5	5.52	6.0	16.	155	6.50	8.0
2.	15	5.76	6.5	17.	167	5.86	6.7
3.	25	5.39	5.7	18.	175	5.18	5.3
4.	35	5.13	5.2	19.	185	8.26	11.5
5.	45	5.07	5.1	20.	Not suitable for anal.		
6.	55	5.75	6.5	21.	Not suitable for anal.		
7.	65	6.27	7.5	22.	215	5.81	6.6
8.	75	5.71	6.4	23.	225	6.97	8.9
9.	87	5.45	5.9	24.	235	6.43	7.8
10.	95	6.03	7.0	25.	245	7.43	9.8
11.	105	6.28	7.5				
12.	115	5.82	6.6				
13.	125	4.76	4.5				
14.	135	4.71	4.4				
15.	145	5.34	5.6				

Average raw score of 23 samples = 5.89 Grade Equivalent 6.7

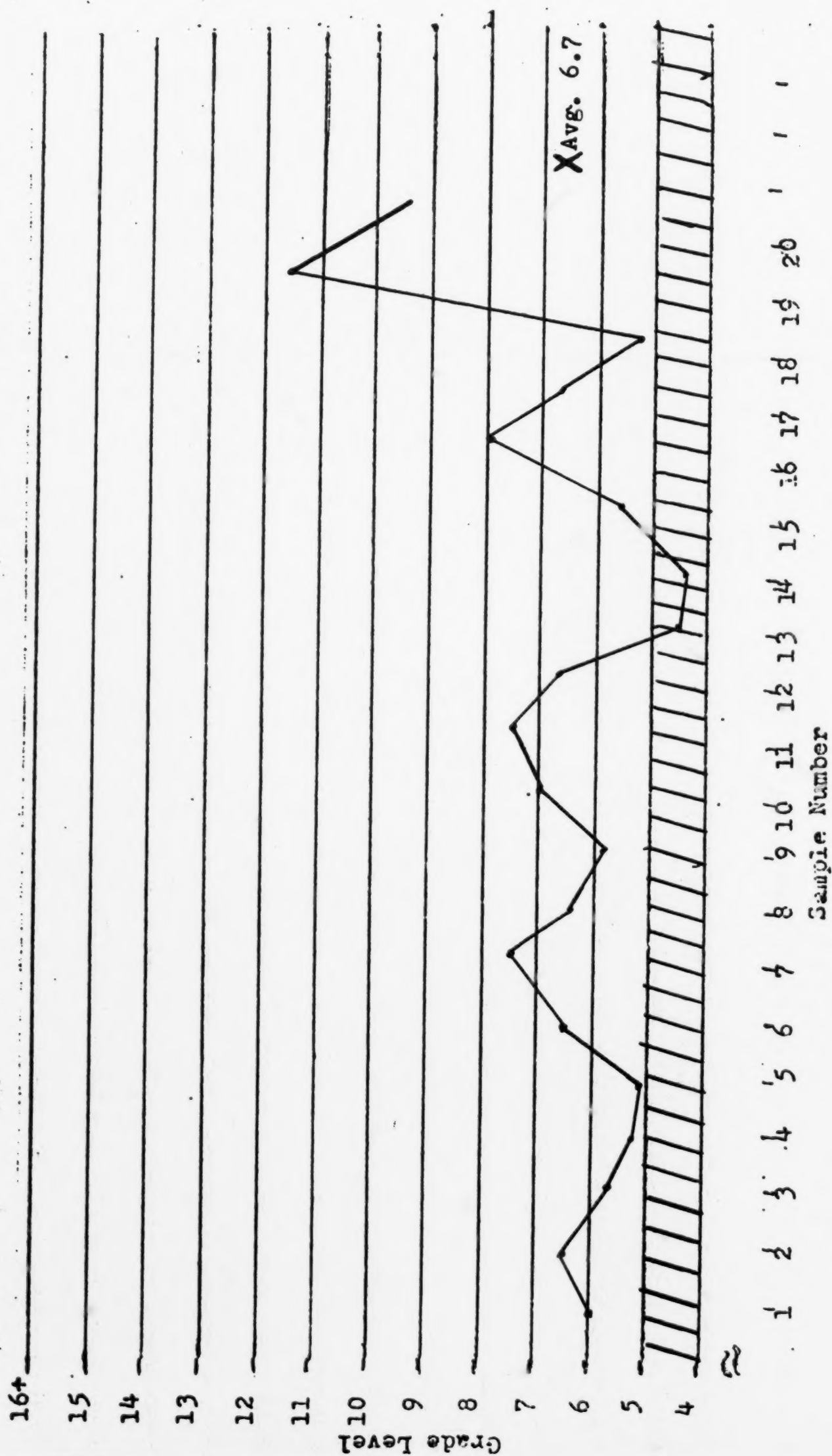


Figure 7. Grade Equivalents of Indiana Adventure - Grade 4 Textbook (I-3)

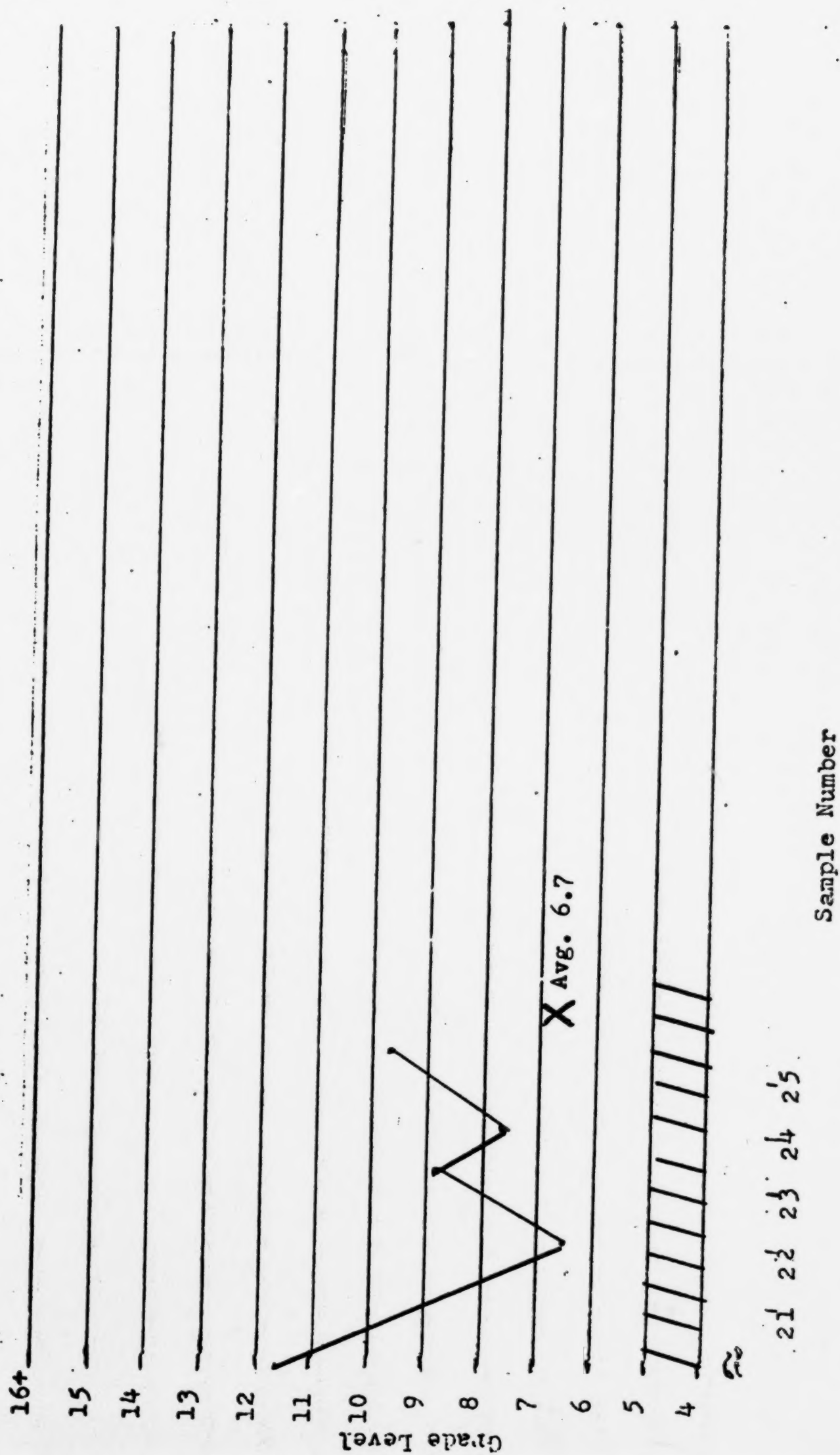


Figure 7. (continued)

TABLE 8. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF THE UNITED STATES AND CANADA - GRADE 5 TEXTBOOK (I-4)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
United States Section							
1.	5	4.69	4.3	26.	255	5.12	5.2
2.	15	5.07	5.1	27.	265	5.33	5.6
3.	23	5.39	5.7	28.	275	5.71	6.4
4.	35	5.34	5.6	29.	285	5.44	5.8
5.	45	4.34	-4.0	30.	295	5.50	6.0
6.	55	5.45	5.9	31.	305	6.19	7.3
7.	65	5.35	5.7	32.	315	5.70	6.4
8.	75	5.24	5.4	33.	325	5.49	5.9
9.	85	5.75	6.5	Canadian Section			
10.	95	4.45	-4.0	34.	5	5.71	6.4
11.	105	5.20	5.4	35.	15	6.97	8.9
12.	115	4.71	4.4	36.	25	4.61	4.2
13.	125	4.80	4.6	37.	35	5.23	5.4
14.	135	4.91	4.8	38.	45	6.91	8.8
15.	145	4.86	4.7	39.	55	6.44	7.8
16.	155	5.07	5.1				
17.	165	4.71	4.4				
18.	175	5.23	5.4				
19.	185	4.76	4.5				
20.	195	5.12	5.2				
21.	205	4.92	4.8				
22.	215	5.64	6.2				
23.	225	5.28	5.5				
24.	235	5.28	5.5				
25.	245	5.38	5.7				
Average raw score of 39 samples = 5.32 Grade Equivalent 5.6							
U. S. section 33 samples = 5.19 Grade Equivalent 5.3							
Canadian section 6 samples = 5.98 Grade Equivalent 6.9							

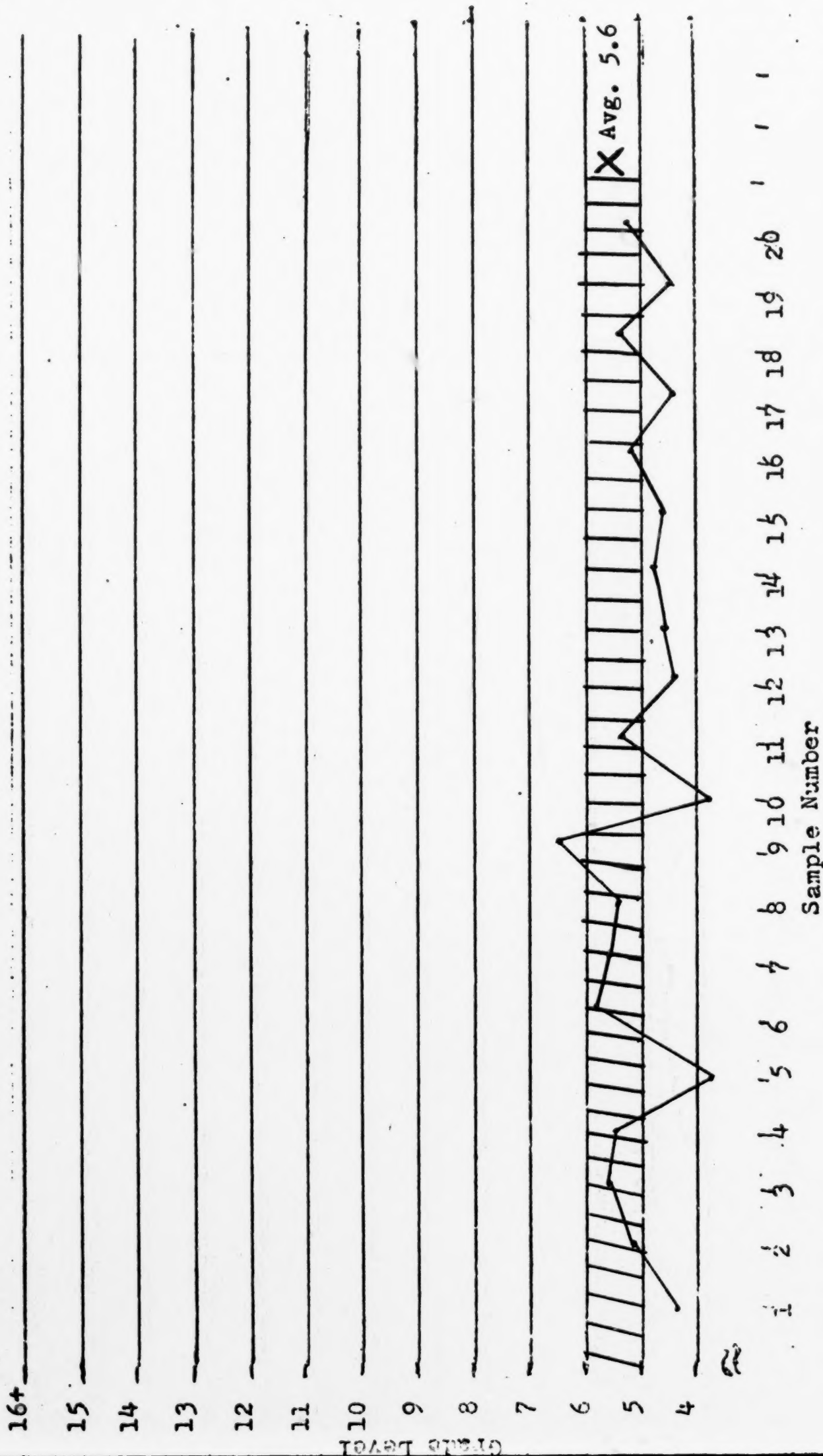


Figure 8. Grade Equivalents of The United States and Canada - Grade 5 Textbook (I-4)

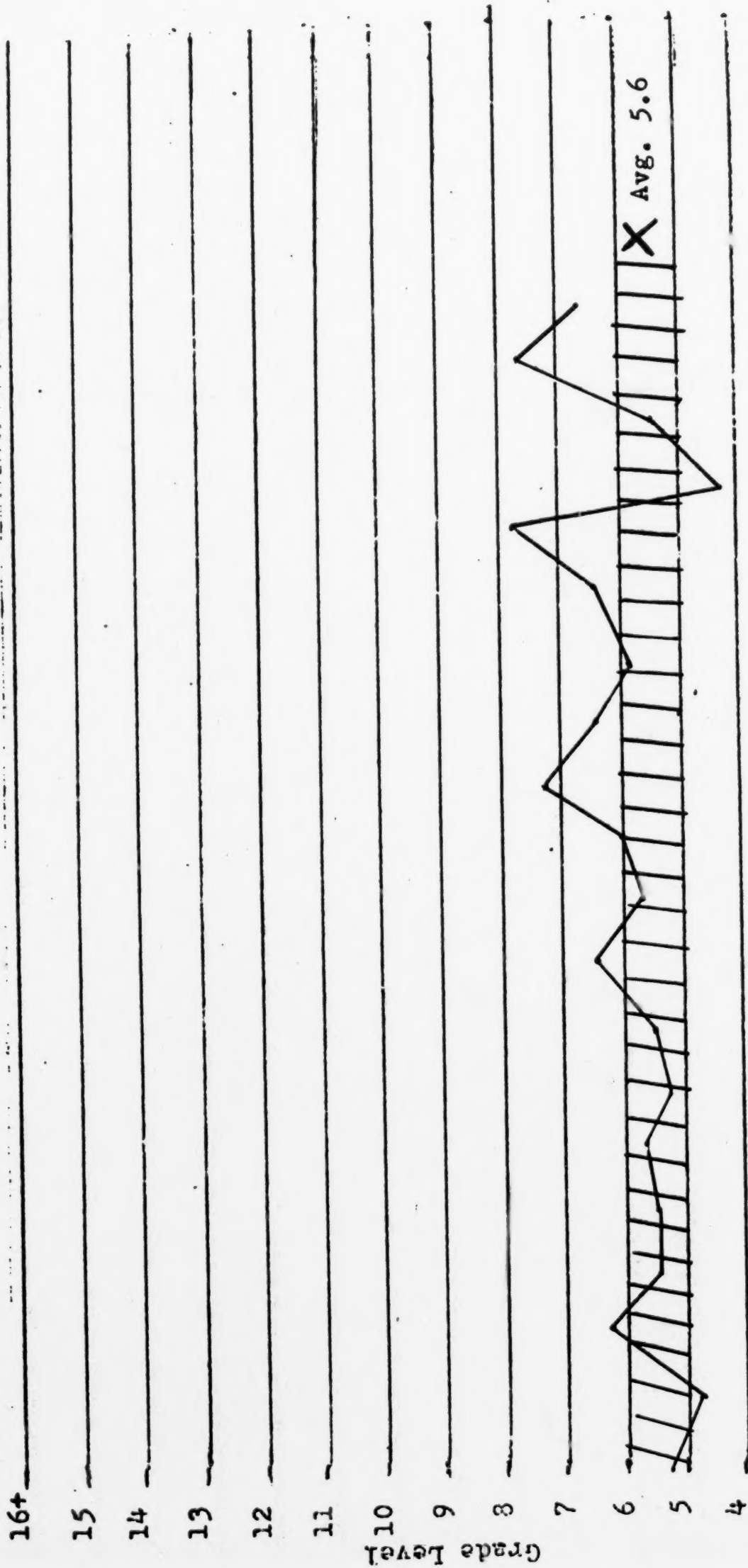


Figure 8. (continued)

TABLE 9. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF KNOWING OUR NEIGHBORS IN THE UNITED STATES AND CANADA -
GRADE 5 TEXTBOOK (I-5)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
United States Section							
1.	9	5.90	6.8	31.	309	5.96	6.9
2.	19	6.97	8.9	32.	319	6.18	7.3
3.	27	6.54	8.0	33.	330	5.90	6.8
4.	38	5.63	6.2	34.	339	4.97	4.9
5.	49	6.38	7.7	35.	348	5.34	5.6
6.	59	5.76	6.5	36.	359	6.01	7.0
7.	69	4.65	4.3	37.	369	6.28	7.5
8.	79	5.45	5.9	38.	379	5.43	5.8
9.	89	5.49	5.9	39.	389	5.26	5.5
10.	99	5.40	5.8	40.	399	5.86	6.7
11.	109	5.97	6.9	41.	409	5.18	5.3
12.	119	6.18	7.3	42.	418	4.34	4.0
13.	129	5.97	6.9	43.	429	4.76	4.5
14.	139	5.49	5.9	Canadian Section			
15.	149	5.50	6.0	44.	9	5.13	5.2
16.	159	6.02	7.0	45.	19	5.34	5.6
17.	169	5.86	6.7	46.	28	4.66	4.3
18.	179	6.23	7.4	47.	39	5.39	5.7
19.	189	5.49	5.9	48.	49	5.07	5.1
20.	199	5.07	5.1	49.	57	5.30	5.6
21.	209	4.97	4.9	50.	69	5.65	6.3
22.	219	5.24	5.4	51.	79	4.55	4.1
23.	229	5.65	6.3	52.	89	5.75	6.5
24.	239	5.59	6.1	53.	99	4.76	4.5
25.	249	5.97	6.9	54.	109	5.60	6.2
26.	259	6.50	8.0	55.	119	5.71	6.4
27.	269	5.28	5.5				
28.	279	5.28	5.5				
29.	289	4.91	4.8				
30.	300	6.28	7.5				

Average raw score of 55 samples = 5.56 Grade Equivalent 6.1

U. S. section 43 samples = 5.65 Grade Equivalent 6.3
Canadian section 12 samples = 5.24 Grade Equivalent 5.4

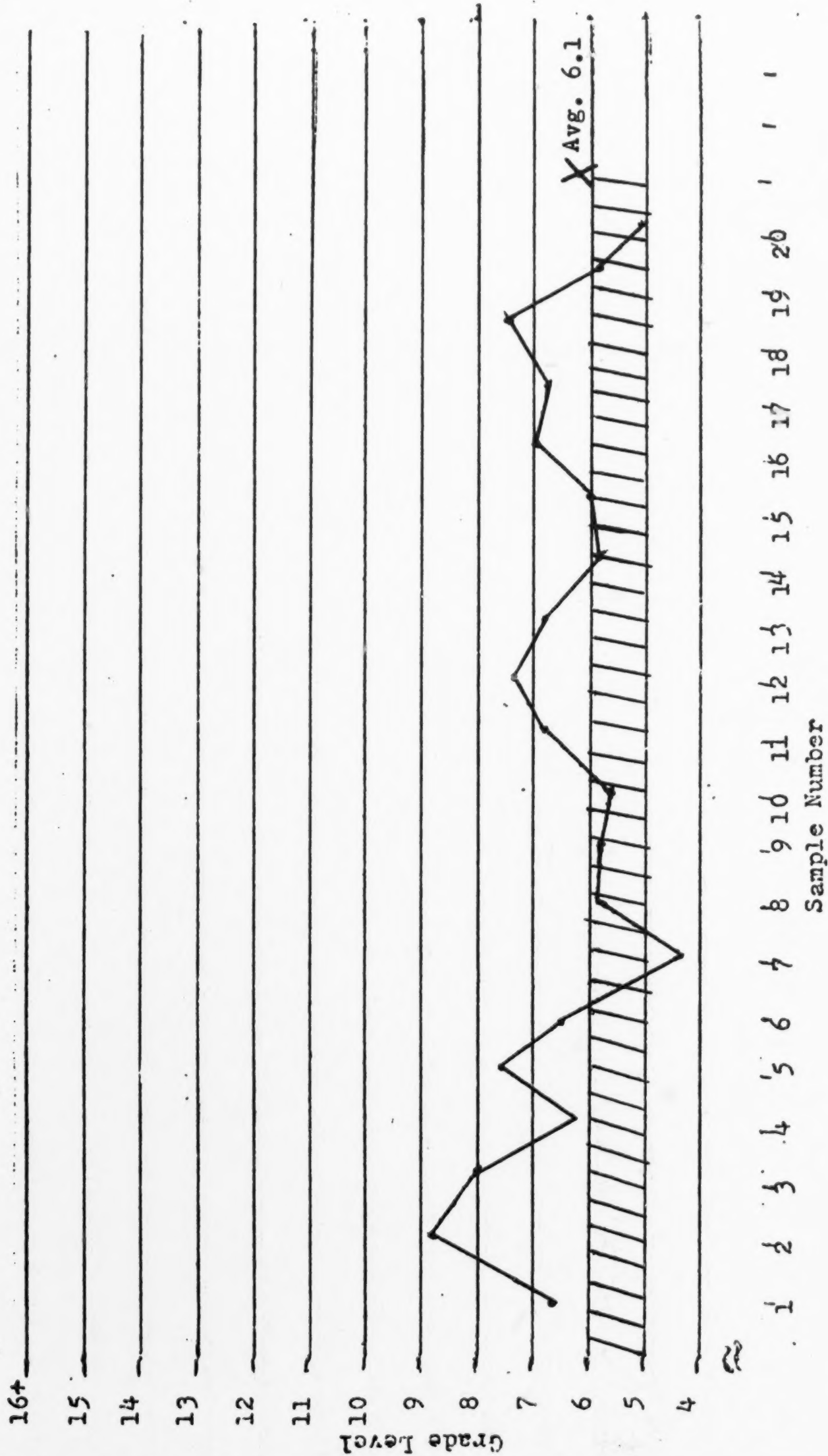


Figure 9. Grade Equivalents of Knowing Our Neighbors in the United States and Canada - Grade 5 Textbook

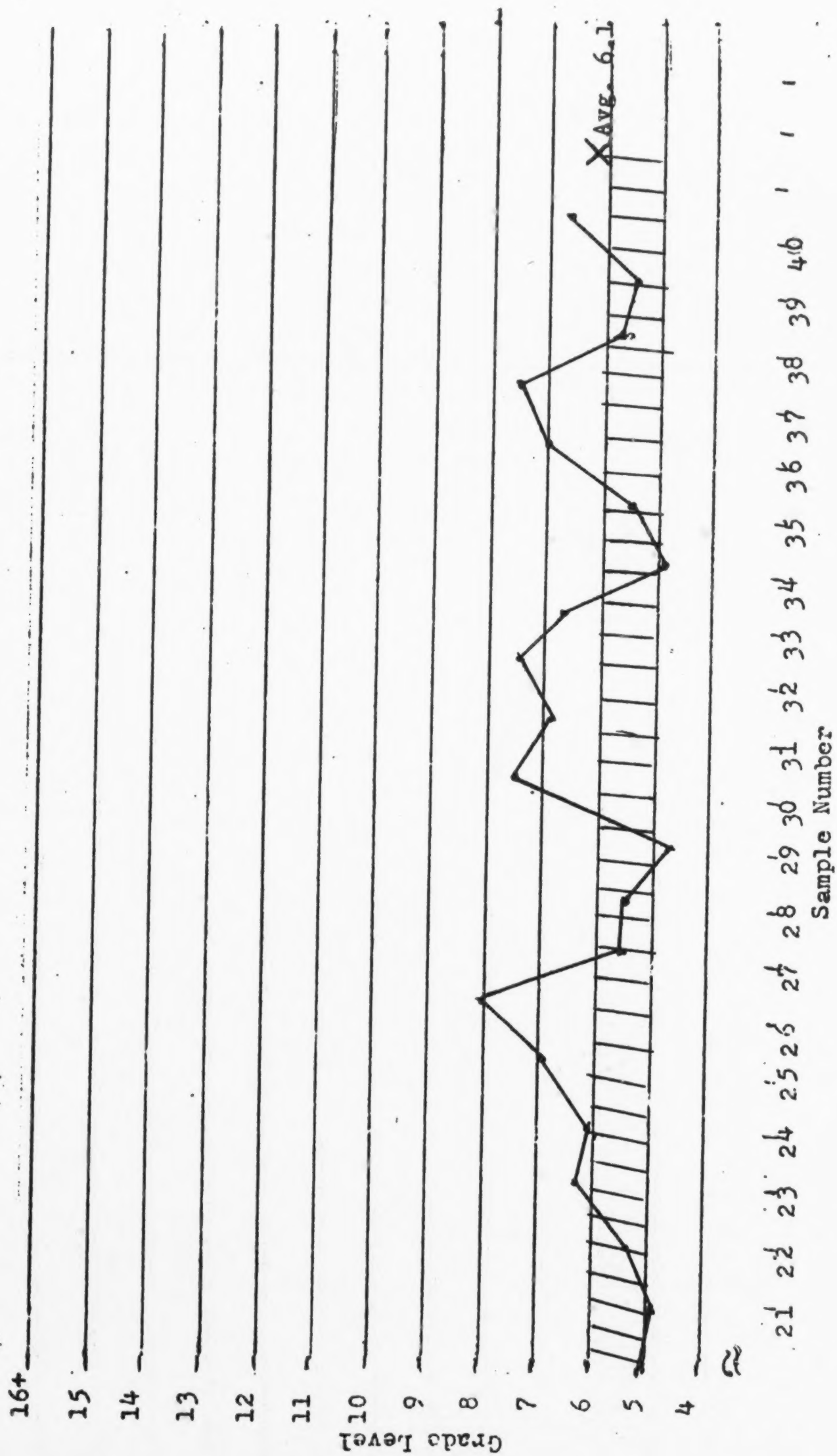


Figure 9. (continued)

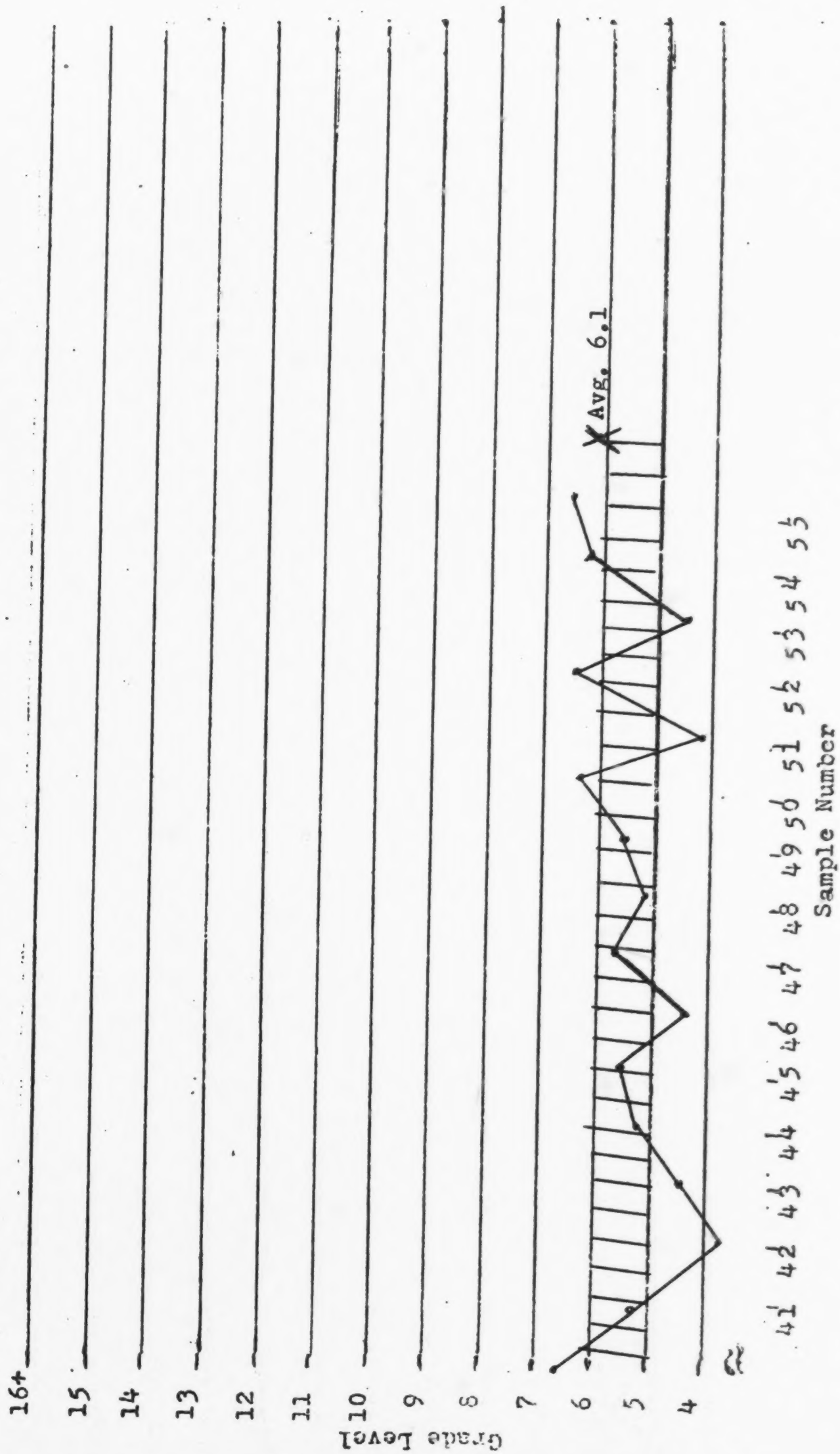


Figure 9. (continued)

TABLE 10. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF UNDERSTANDING YOUR COUNTRY AND CANADA - GRADE 5 TEXTBOOK
(I-6)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	4.81	4.6	26.	259	5.13	5.2
2.	19	6.14	7.2	27.	269	5.86	6.7
3.	29	4.71	4.4	28.	279	4.60	4.2
4.	39	4.97	4.9	29.	289	5.92	6.8
5.	49	5.02	5.0	30.	299	4.55	4.1
6.	59	5.12	5.2	31.	309	6.18	7.3
7.	69	5.07	5.1	32.	319	5.45	5.9
8.	79	5.80	6.6	33.	329	5.70	6.4
9.	89	5.13	5.2	34.	339	5.34	5.6
10.	99	6.49	7.9	35.	349	5.28	5.5
11.	109	6.43	7.8	36.	359	5.55	6.1
12.	119	5.18	5.3	37.	369	6.39	7.7
13.	129	5.08	5.1	38.	379	5.39	5.7
14.	139	4.97	4.9	39.	389	5.23	5.4
15.	149	5.87	6.7	40.	399	5.76	6.5
16.	159	5.76	6.5	41.	409	6.49	7.9
17.	169	6.12	7.2	42.	419	5.64	6.2
18.	178	4.96	4.9	43.	428	7.55	10.1
19.	189	5.85	6.7	44.	439	5.96	6.9
20.	199	4.92	4.8	45.	449	5.60	6.2
21.	209	5.39	5.7	46.	459	5.76	6.5
22.	219	5.39	5.7	47.	469	6.72	8.4
23.	229	5.49	5.9	48.	479	6.71	8.4
24.	239	4.61	4.2	49.	489	6.19	7.3
25.	249	4.85	4.7				
Average raw score of 48 samples = 5.57 Grade Equivalent 6.1							

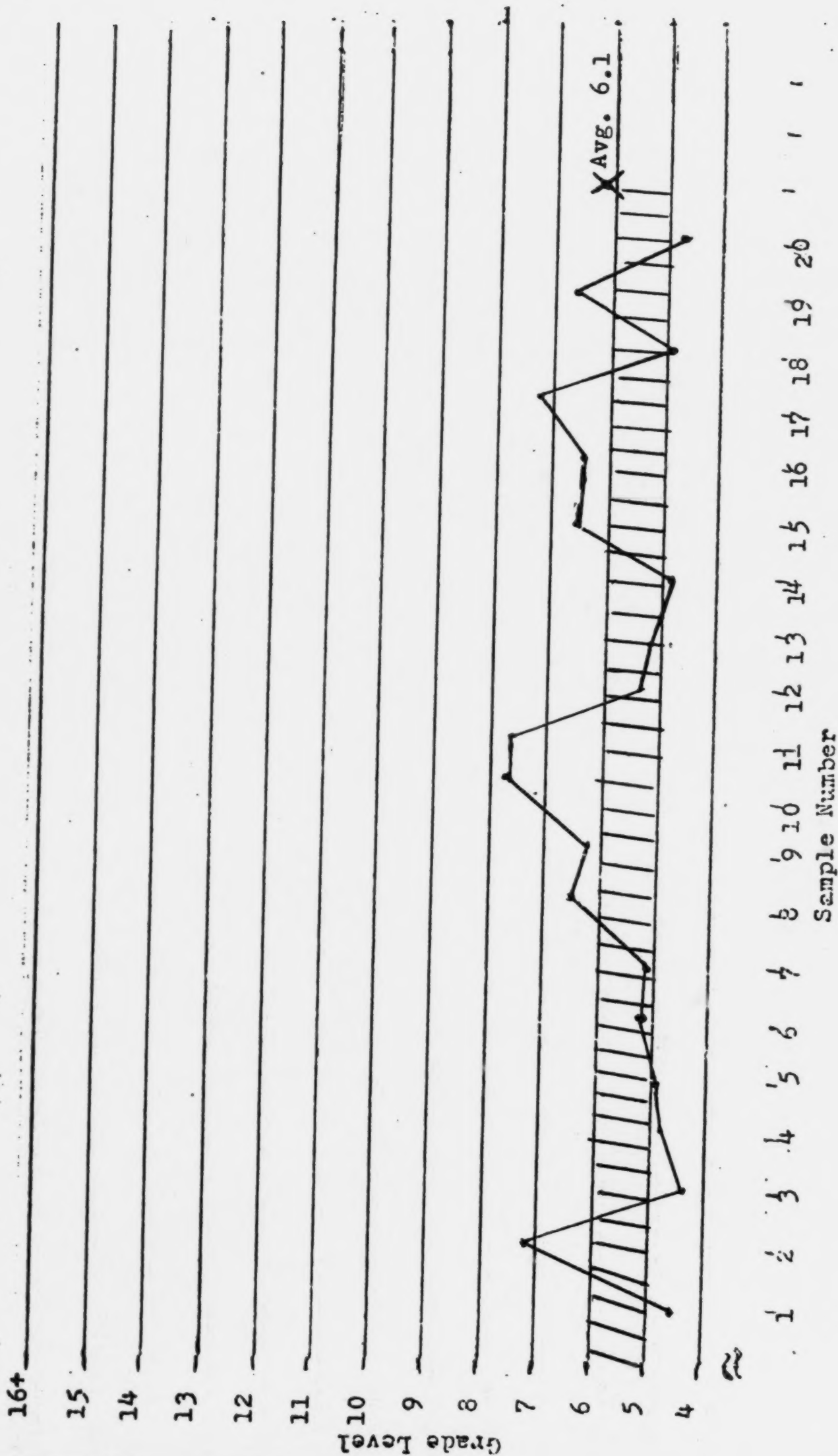
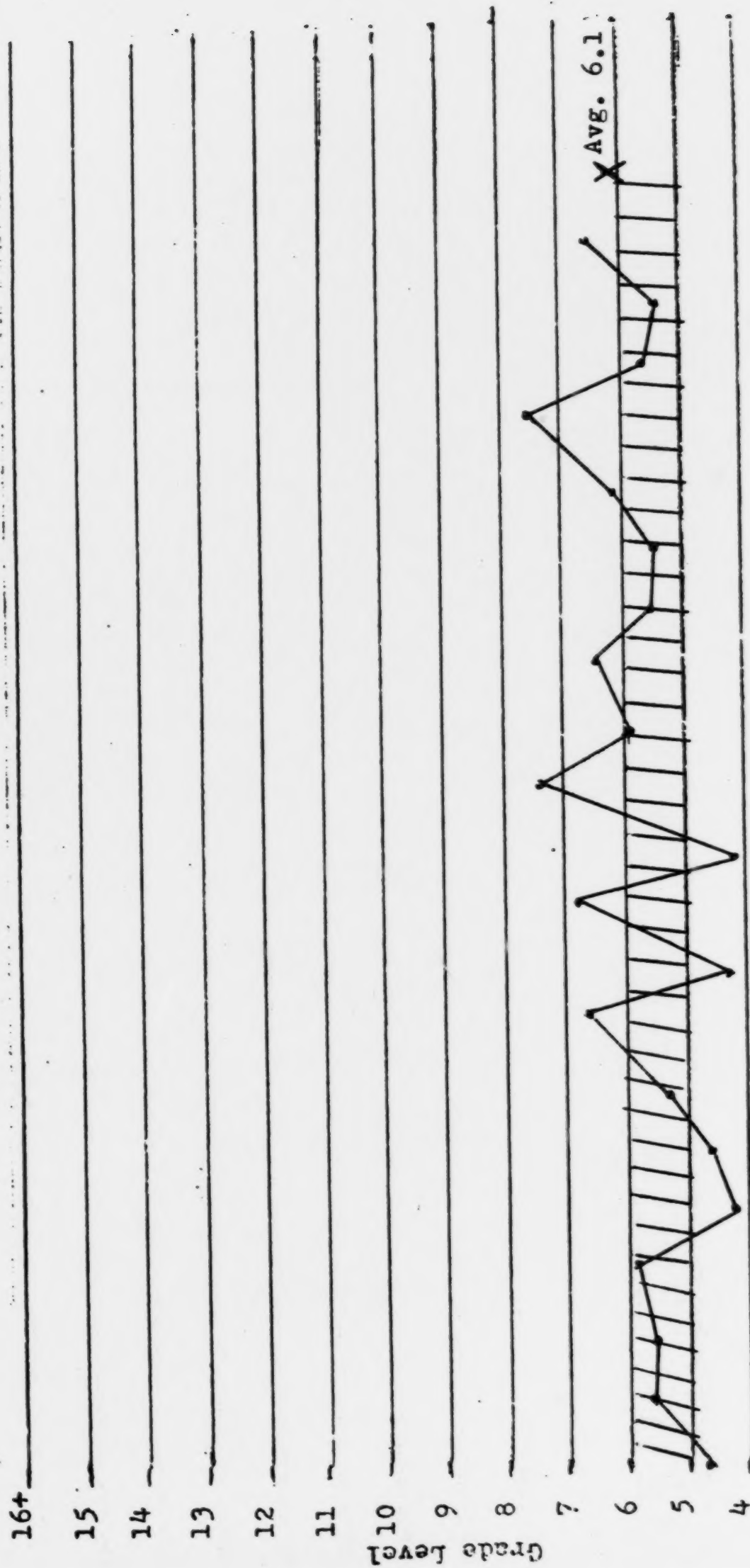


Figure 10. Grade Equivalents of Understanding Your Country and Canada - Grade 5 Textbook (I-6)



21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Sample Number

Figure 10. (continued)

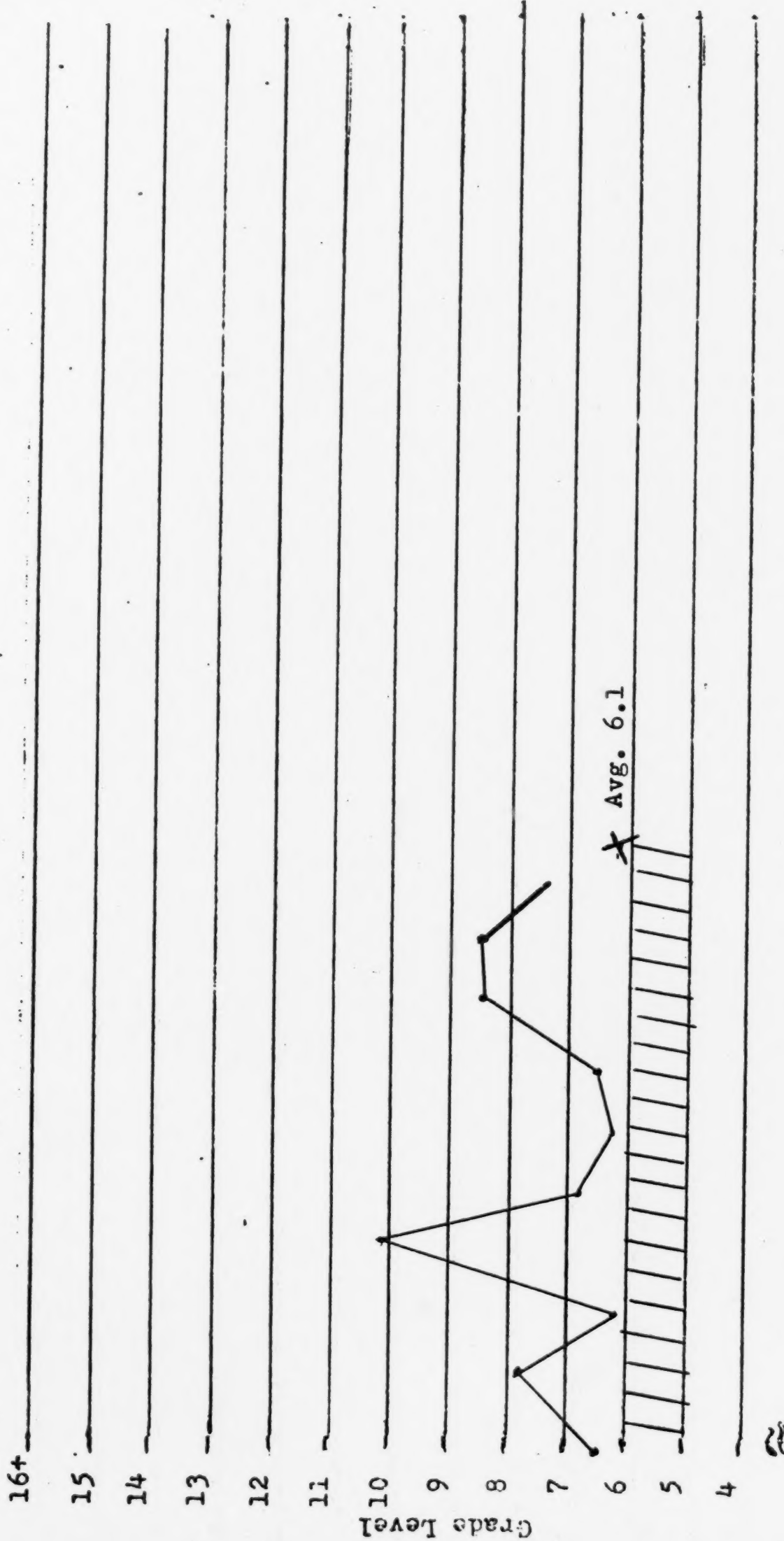


Figure 10. (continued)

TABLE 11. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF EXPLORING REGIONS OF THE WESTERN HEMISPHERE - GRADE 5
TEXTBOOK (I-7)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	5	5.54	6.0	26.	265	4.39	-4.0
2.	24	5.40	5.8	27.	277	6.65	8.3
3.	35	5.45	5.9	28.	286	4.76	4.5
4.	45	5.54	6.0	29.	294	5.01	5.0
5.	55	5.18	5.3	30.	307	5.49	5.9
6.	66	5.65	6.3	31.	315	4.56	4.1
7.	74	7.33	9.6	32.	325	5.65	6.3
8.	87	6.07	7.1	33.	336	5.54	6.0
9.	97	5.59	6.1	34.	346	5.81	6.6
10.	106	5.59	6.1	35.	357	5.49	5.9
11.	115	5.50	6.0	36.	366	5.32	5.6
12.	124	5.34	5.6	37.	374	6.08	7.1
13.	136	6.12	7.2	38.	387	5.66	6.3
14.	145	5.65	6.3	39.	396	5.86	6.7
15.	155	5.23	5.4	40.	406	7.02	9.0
16.	164	5.29	5.5	41.	415	4.92	4.8
17.	174	4.97	4.9	42.	426	6.28	7.5
18.	185	5.90	6.8	43.	436	5.82	6.6
19.	194	5.96	6.9	44.	443	6.90	8.8
20.	205	6.50	8.0				
21.	215	5.24	5.4				
22.	225	6.50	8.0				
23.	235	5.29	5.5				
24.	245	4.55	4.1				
25.	255	8.07	11.1				
Average raw score of 44 samples = 5.70 Grade Equivalent 6.4							

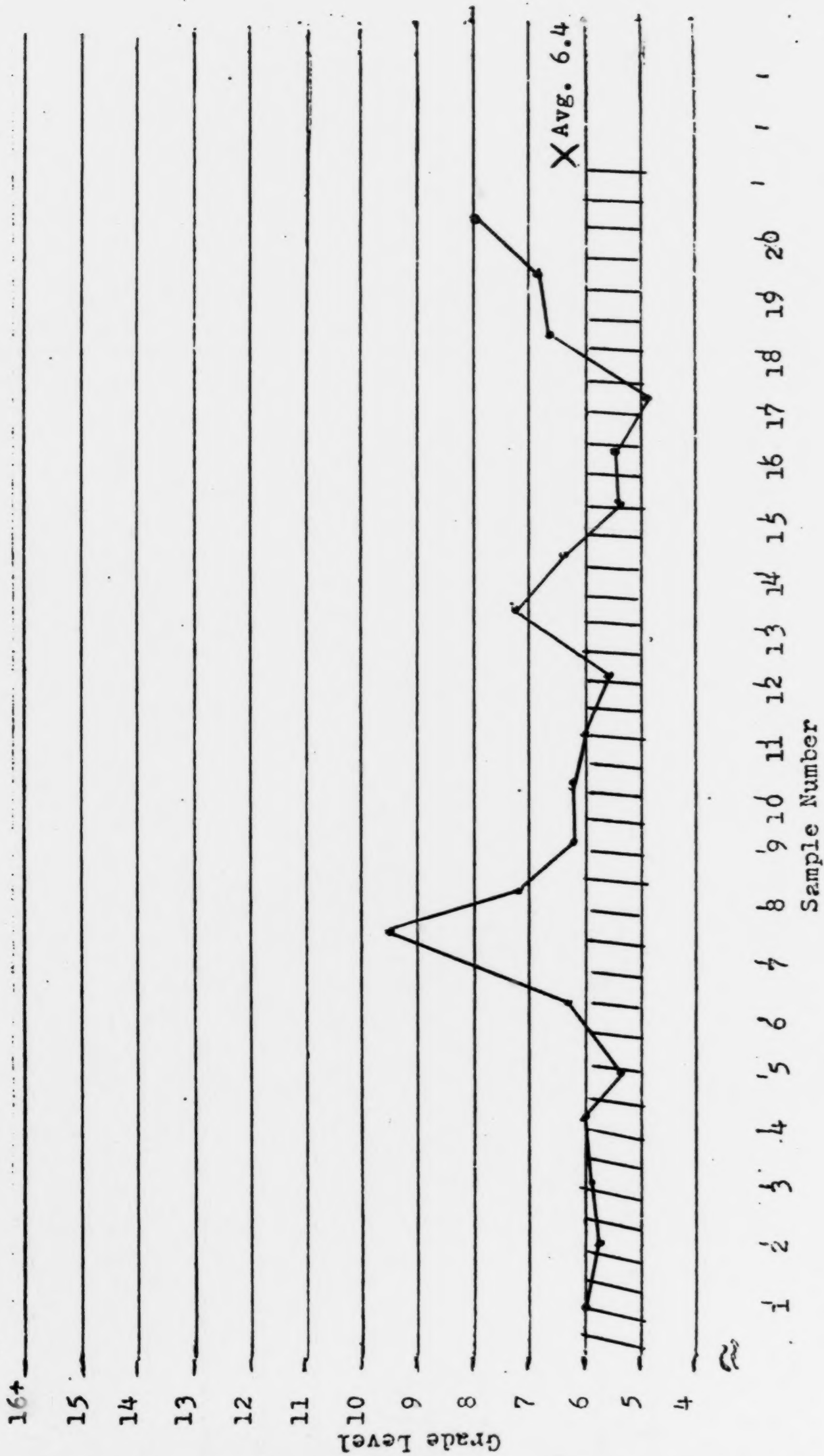


Figure 11. Grade Equivalents of Exploring Regions of the Western Hemisphere - Grade 5
Textbook (I-7)

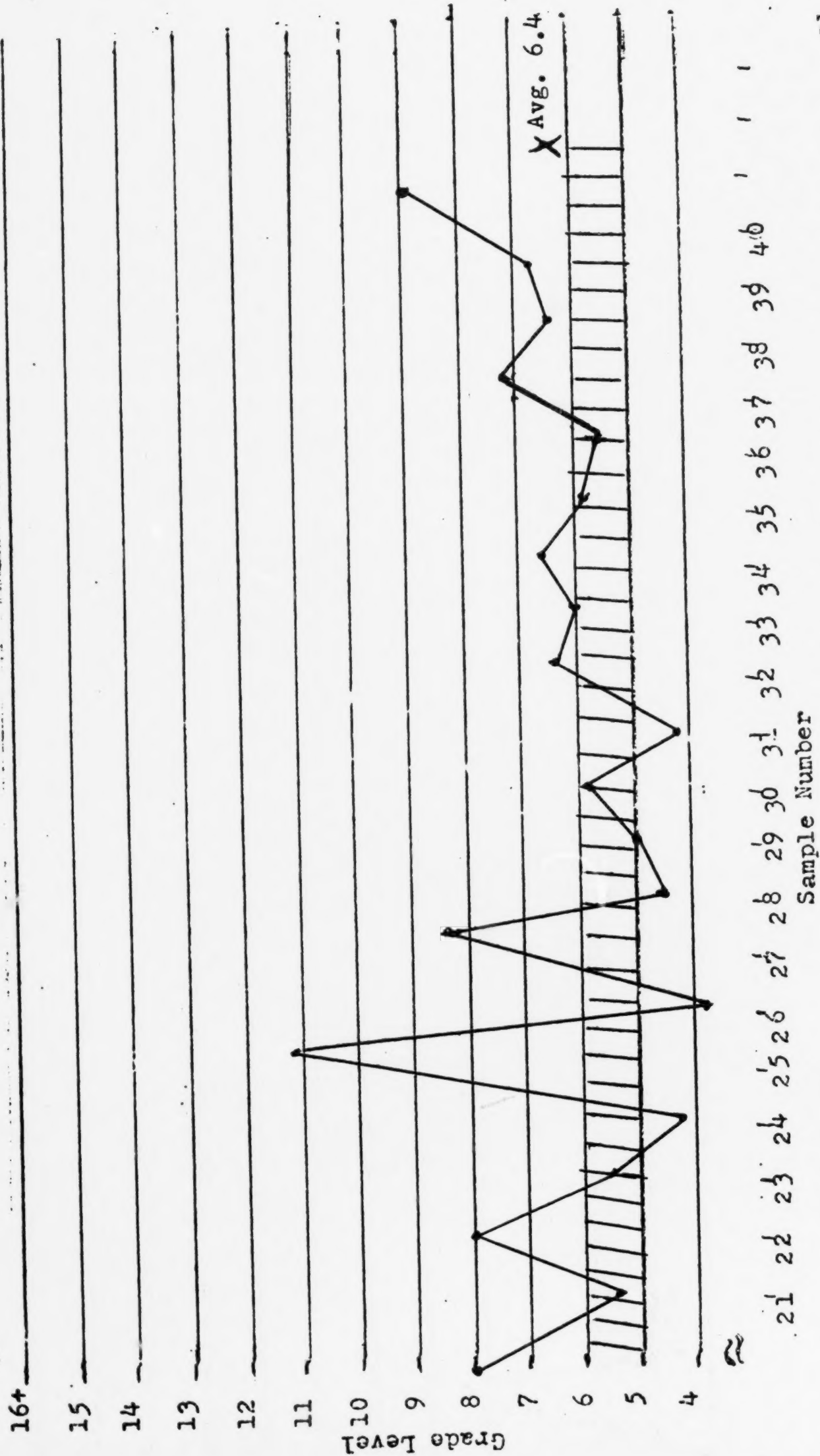


Figure 11 (continued)

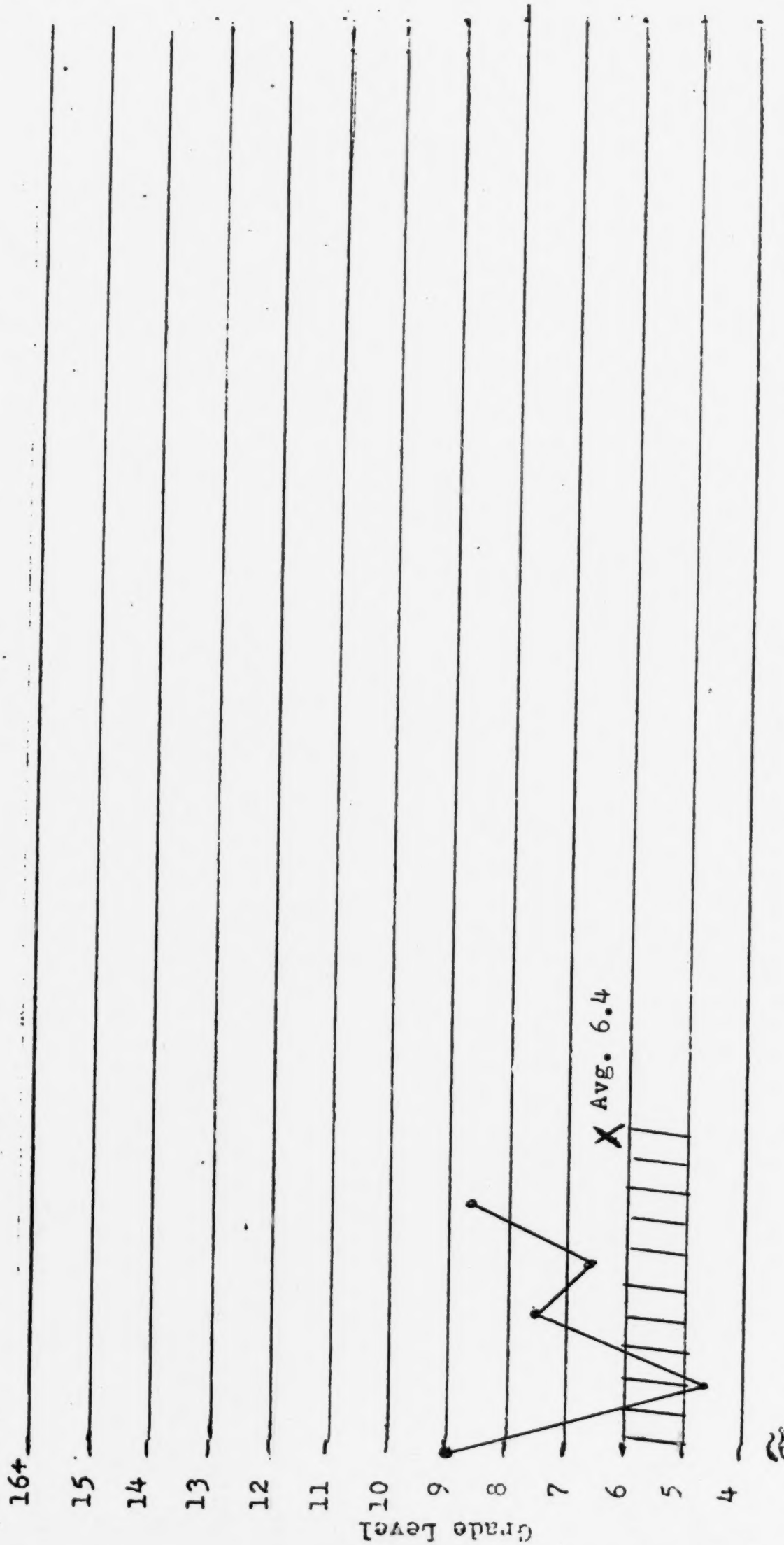


Figure 11. (continued)

TABLE 12. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF THE CHANGING NEW WORLD: UNITED STATES AND CANADA -
GRADE 5 TEXTBOOK (1-8)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	8	5.12	5.2	21.	208	5.59	6.1
2.	18	6.81	8.6	22.	218	5.63	6.2
3.	28	4.91	4.8	23.	228	5.69	6.3
4.	38	6.17	7.3	24.	238	4.55	4.1
5.	48	5.18	5.3	25.	248	5.28	5.5
6.	58	5.08	5.1	26.	258	5.49	5.9
7.	68	5.65	6.3	27.	268	5.54	6.0
8.	78	5.70	6.4	28.	278	5.85	6.7
9.	88	5.91	6.8	29.	288	5.33	5.6
10.	98	6.38	7.7	30.	298	7.07	9.1
11.	107	5.48	5.9	31.	308	4.66	4.3
12.	118	5.70	6.4	32.	318	5.74	6.4
13.	128	5.23	5.4	33.	328	5.64	6.2
14.	138	5.17	5.3	34.	338	6.17	7.3
15.	148	5.48	5.9	35.	348	5.34	5.6
16.	156	5.69	6.3	36.	358	5.59	6.1
17.	167	5.82	6.6	37.	368	5.86	6.7
18.	178	5.79	6.5	38.	378	4.96	4.9
19.	188	5.28	5.5	39.	388	5.86	6.7
20.	198	6.23	7.4				

Average raw score of 39 samples = 5.61 Grade Equivalent 6.2

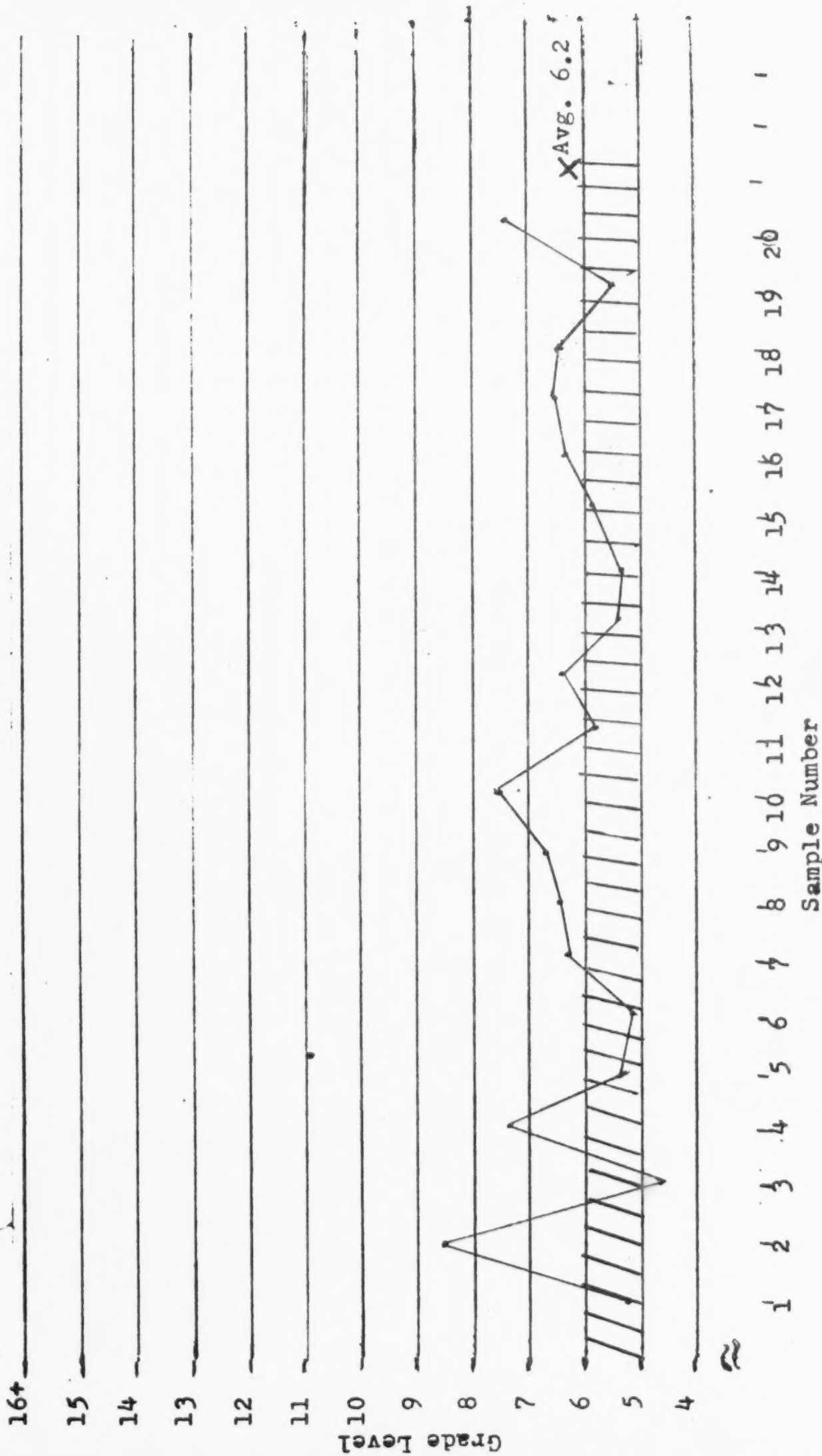


Figure 12. Grade Equivalents of The Changing New World: United States and Canada - Grade 5 Textbook (I-8)

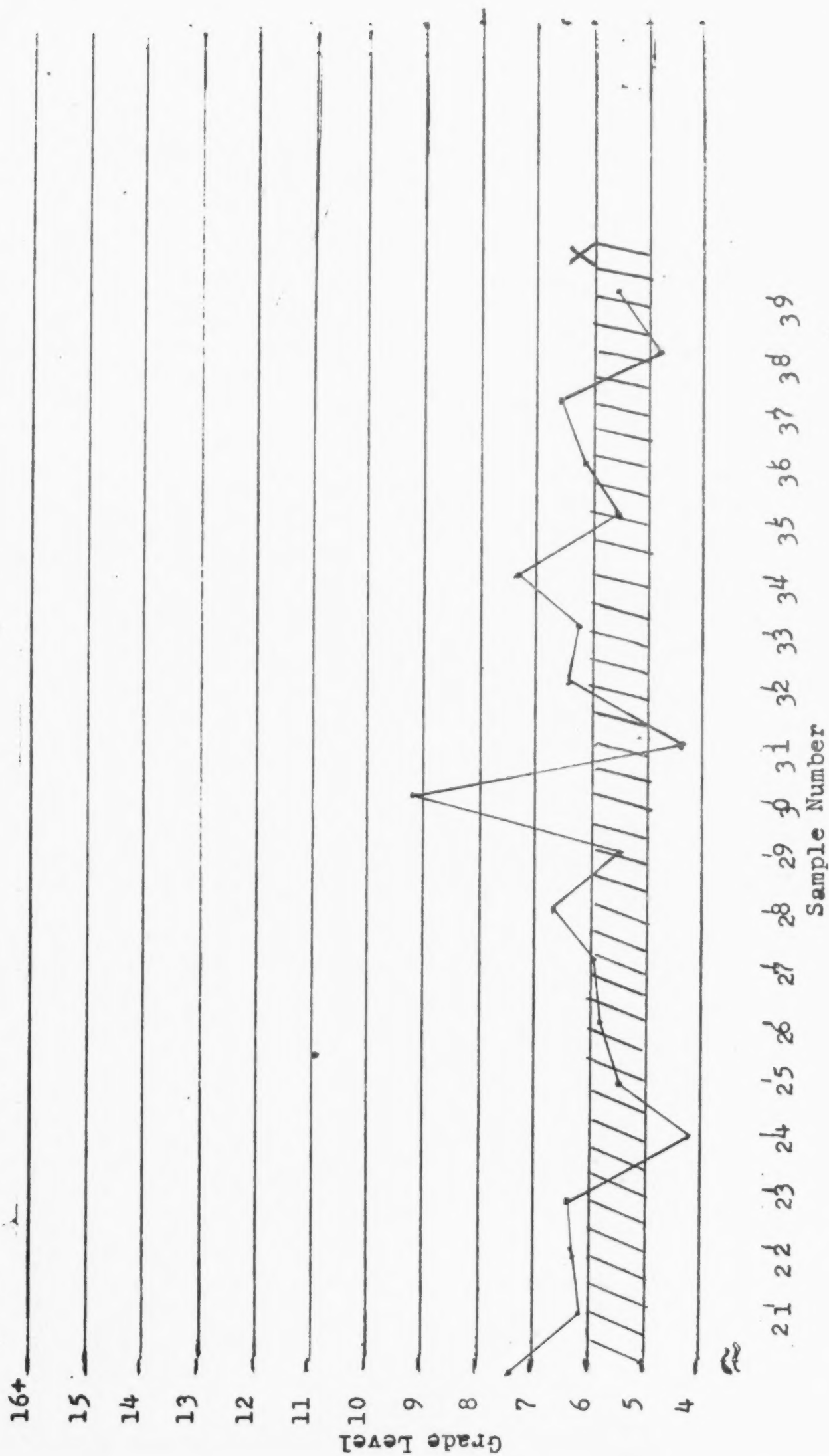


Figure 12. (continued)

TABLE 13. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF THIS IS OUR LAND - GRADE 5 TEXTBOOK (I-9)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	12	4.49	-4.0	26.	262	5.13	5.2
2.	22	5.59	6.1	27.	272	4.29	-4.0
3.	32	4.54	-4.0	28.	282	4.34	-4.0
4.	42	4.39	-4.0	29.	292	4.66	4.3
5.	52	4.39	-4.0	30.	302	4.86	4.7
6.	62	5.49	5.9	31.	312	4.76	4.5
7.	72	5.45	5.9	32.	322	5.49	5.9
8.	82	4.91	4.8	33.	332	4.34	-4.0
9.	92	5.29	5.5	34.	342	4.66	4.3
10.	102	4.60	4.2	35.	351	4.86	4.7
11.	112	4.92	4.8	36.	362	5.45	5.9
12.	122	4.34	-4.0	37.	372	4.92	4.8
13.	132	4.34	-4.0	38.	382	4.40	-4.0
14.	142	5.55	6.1	39.	392	4.40	-4.0
15.	152	4.71	4.4	40.	402	4.45	-4.0
16.	162	5.08	5.1	41.	412	5.50	6.0
17.	172	4.92	4.8	42.	422	4.59	4.1
18.	182	4.34	-4.0	43.	431	5.22	5.4
19.	192	4.87	4.7	44.	442	5.13	5.2
20.	202	5.24	5.4	45.	452	4.71	4.4
21.	212	4.44	-4.0	46.	462	4.81	4.6
22.	222	5.60	6.2	47.	472	4.80	4.6
23.	232	5.18	5.3				
24.	243	4.61	4.2				
25.	253	5.34	5.6				
Average raw score of 47 samples = 4.86 Grade Equivalent 4.7							

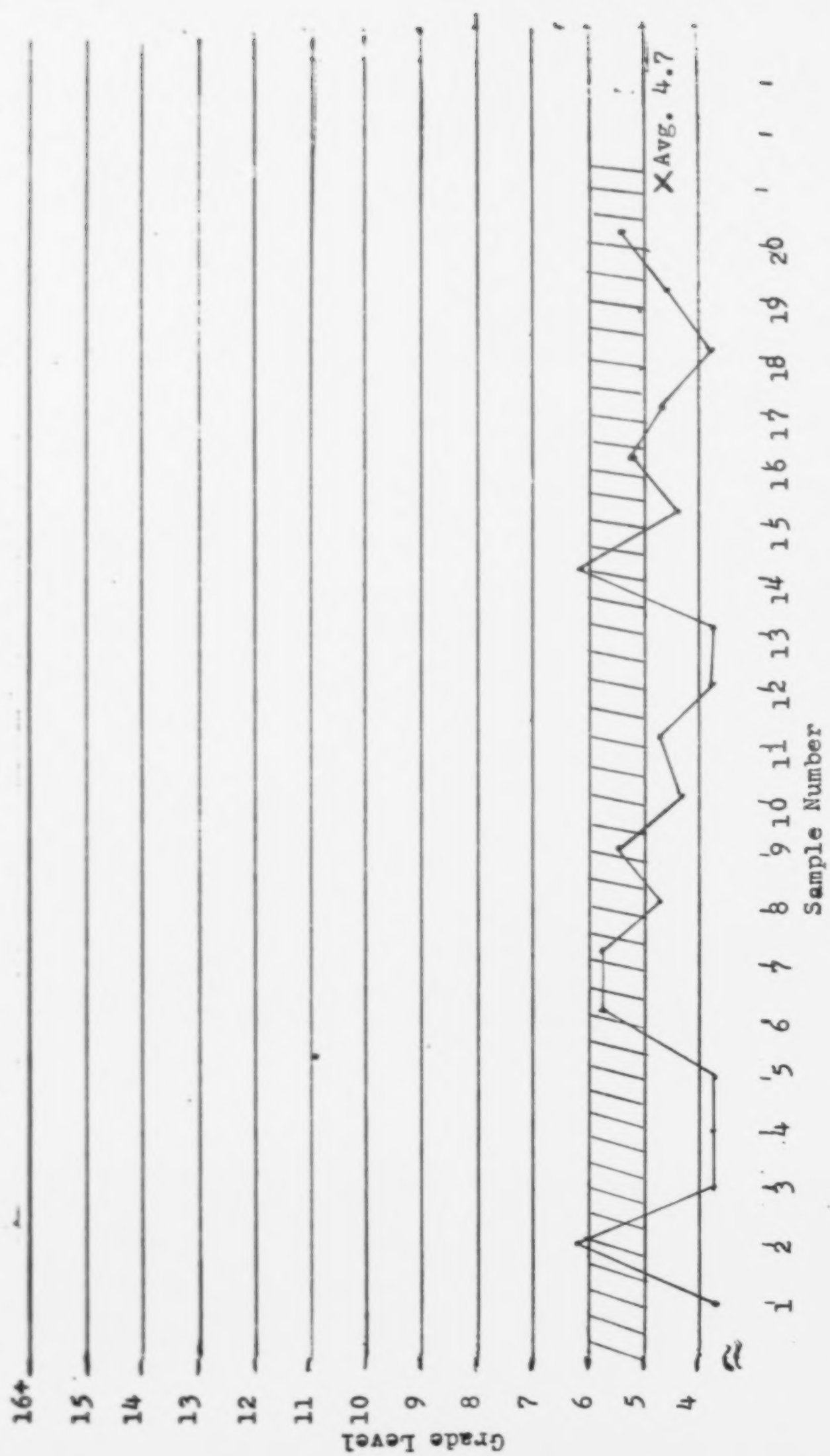


Figure 13. Grade Equivalents of This is Our Land - Grade 5 Textbook (I-9)

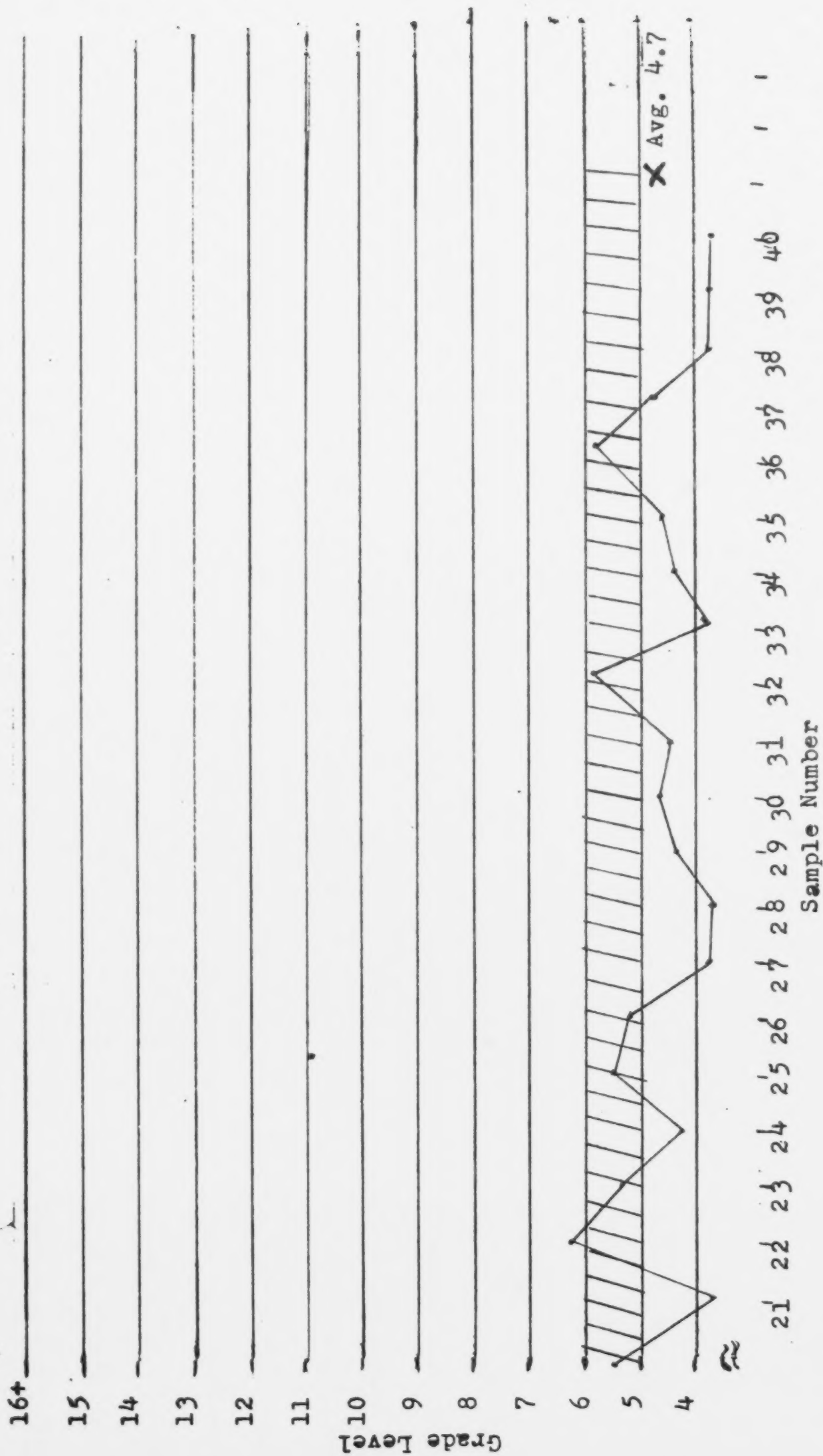
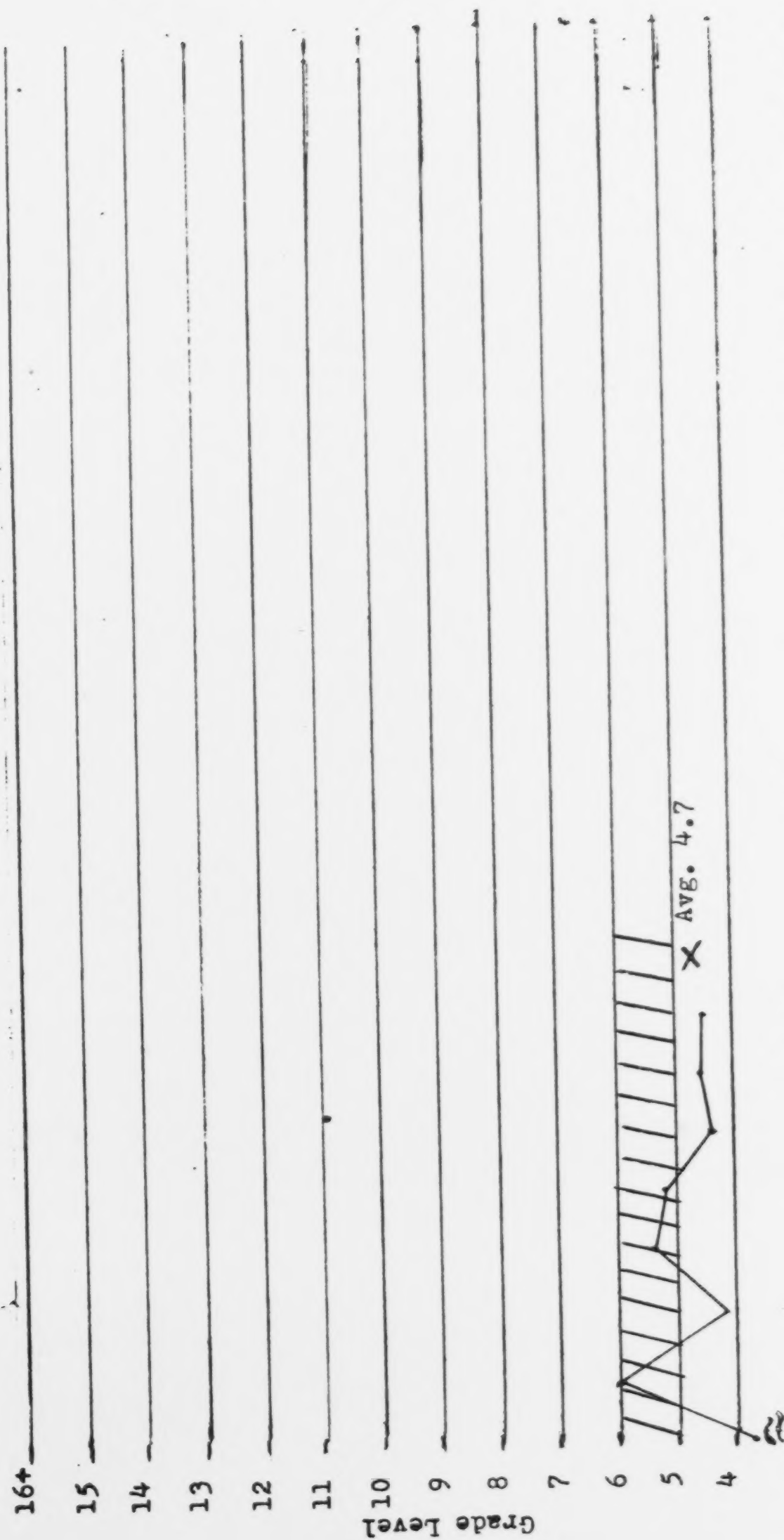


Figure 13. (continued)



41 42 43 44 45 46 47
Sample Number

Figure 13. (continued)

TABLE 14. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF IN THESE UNITED STATES AND CANADA - GRADE 5 TEXTBOOK
(1-10)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	5	5.28	5.5	31.	305	5.91	6.8
2.	15	4.76	4.5	32.	315	5.34	5.6
3.	25	4.86	4.7	33.	325	5.45	5.9
4.	35	5.54	6.0	34.	335	5.97	6.9
5.	45	4.76	4.5	35.	345	5.91	6.8
6.	55	5.50	6.0	36.	355	5.08	5.1
7.	65	4.96	4.9	37.	365	5.59	6.1
8.	75	4.45	4.0	38.	375	4.71	4.4
9.	85	5.19	5.3	39.	385	5.60	6.2
10.	95	5.39	5.7	40.	395	6.27	7.5
11.	105	6.11	7.2	41.	405	6.07	7.1
12.	115	4.76	4.5	42.	415	5.13	5.2
13.	125	4.91	4.8	43.	425	5.76	6.5
14.	135	4.71	4.4	44.	435	5.06	5.1
15.	145	5.59	6.1	45.	445	6.18	7.3
16.	155	5.65	6.3	46.	455	5.81	6.6
17.	165	5.32	5.6	47.	465	5.65	6.3
18.	175	5.54	6.0	48.	475	5.75	6.5
19.	185	5.39	5.7	49.	485	6.73	8.4
20.	195	5.06	5.7	50.	495	6.07	7.1
21.	205	5.80	6.6	51.	505	5.80	6.6
22.	215	5.97	6.9	52.	515	5.91	6.8
23.	225	4.76	4.5	53.	525	6.38	7.7
24.	235	6.81	8.6	54.	535	5.33	5.6
25.	245	7.21	9.4	55.	545	4.97	4.9
26.	255	5.02	5.0				
27.	265	5.39	5.7				
28.	275	6.87	8.7				
29.	285	5.29	5.5				
30.	295	5.70	6.4				

Average raw score of 55 samples = 5.55 Grade Equivalent 6.1

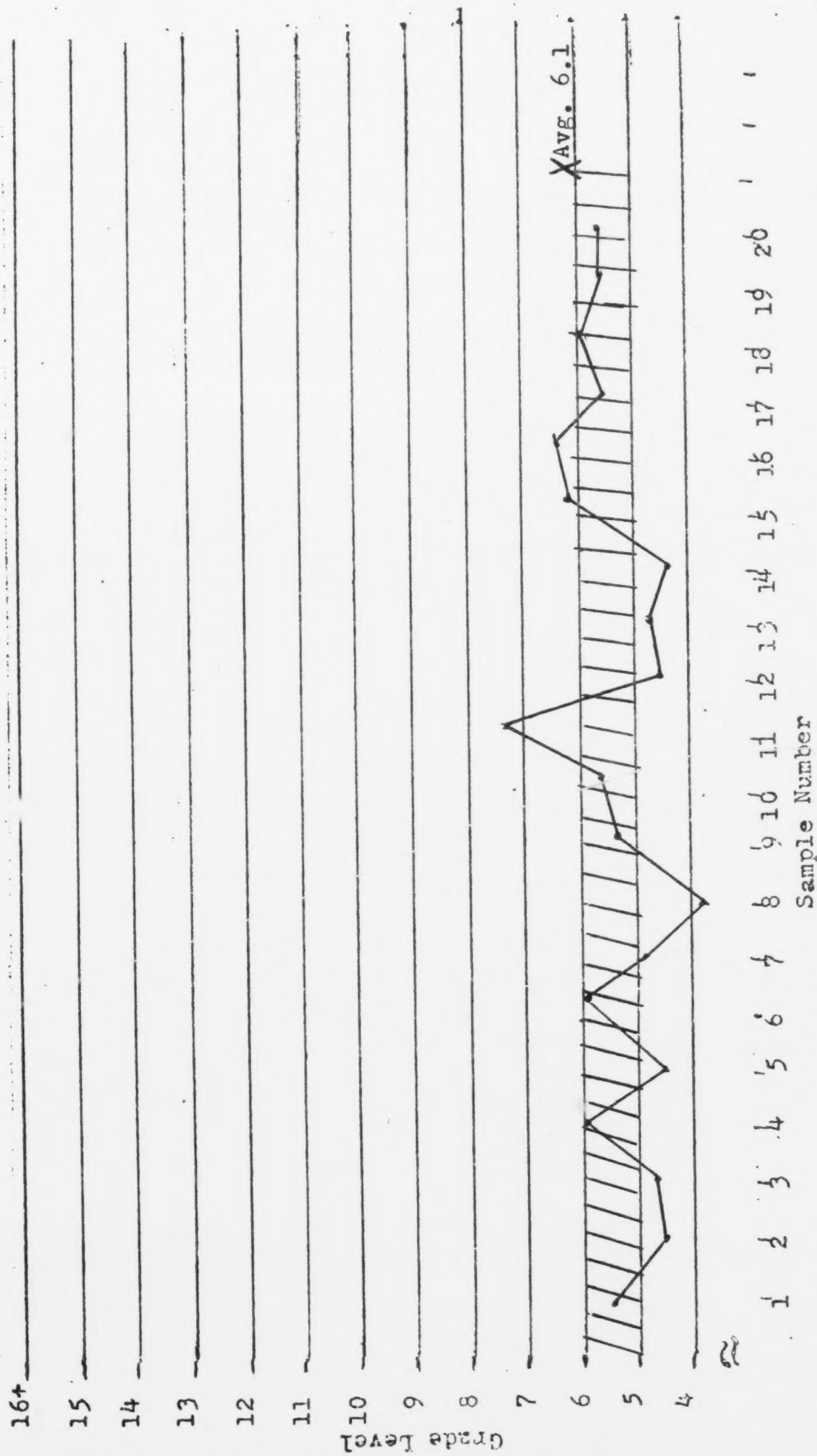


Figure 14. Grade Equivalents of In These United States and Canada - Grade 5 Textbook (I-10)

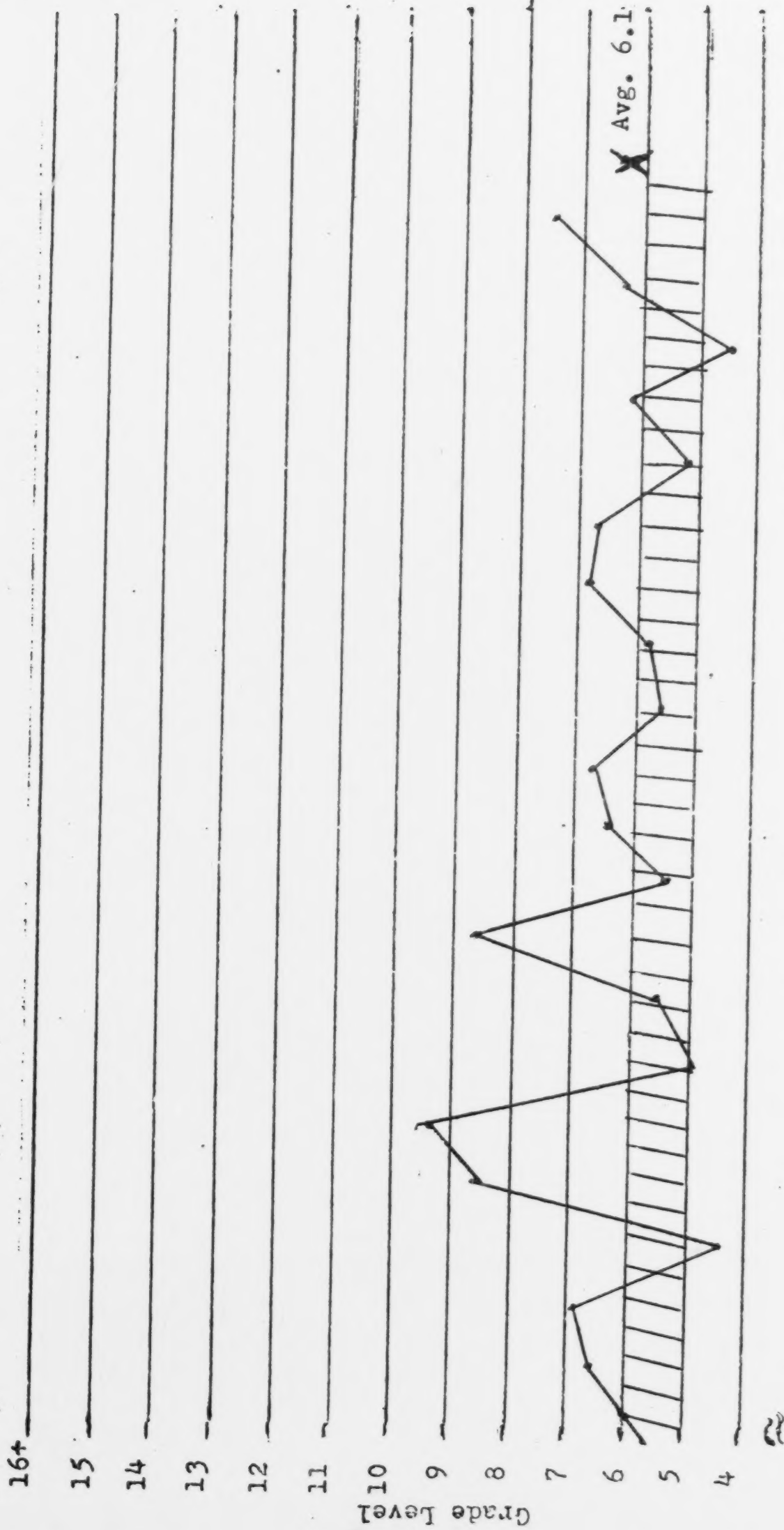


Figure 14. (continued)

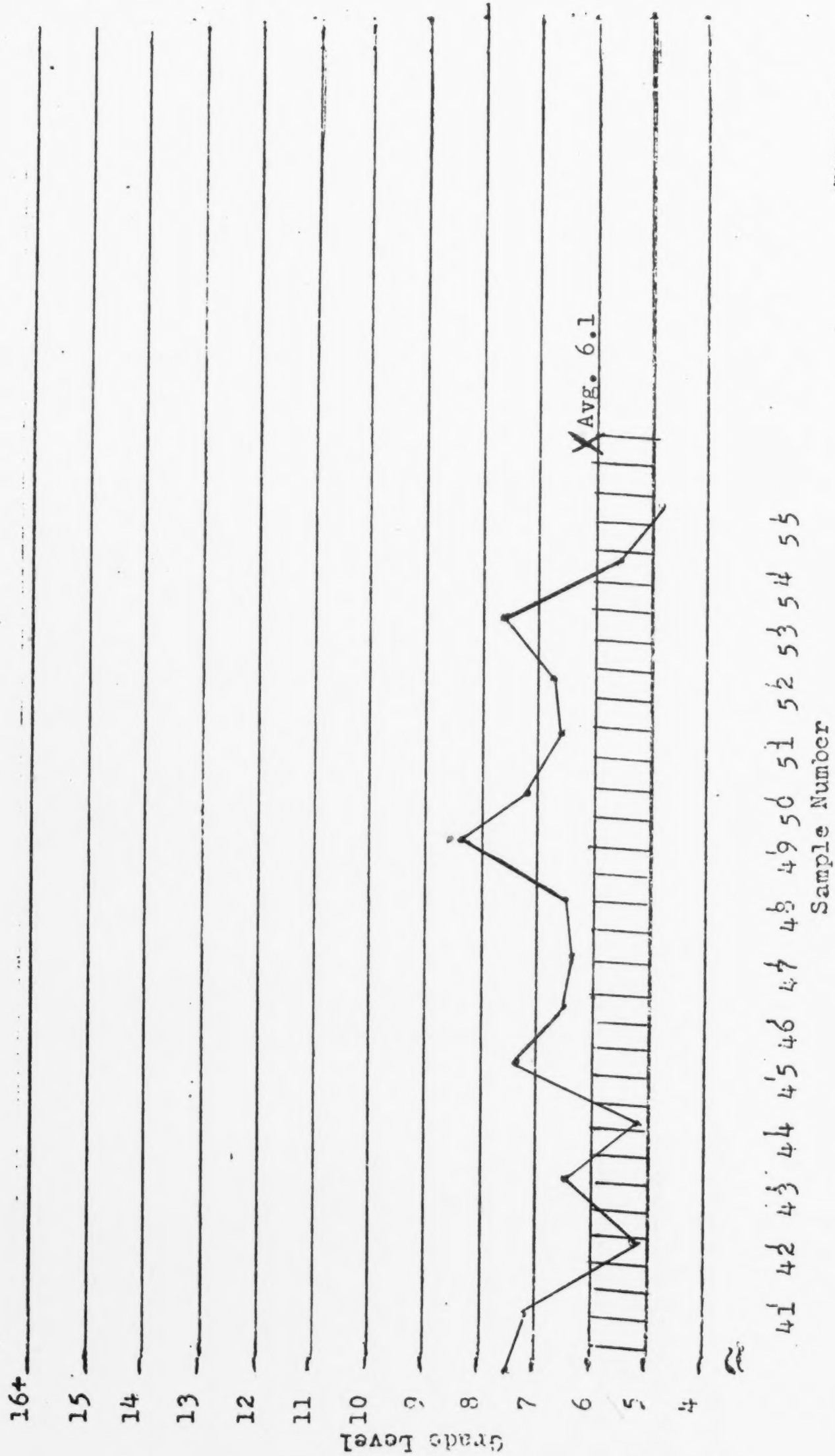


Figure 14. (continued)

TABLE 15. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LATIN AMERICA - GRADE 6 TEXTBOOK (I-11)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	8	6.33	7.6	4.	38	5.81	6.6
2.	18	7.22	9.4	5.	48	7.49	9.9
3.	28	7.28	9.5				
Average raw score of 5 samples = 6.83 Grade Equivalent 8.6							



Figure 15. Grade Equivalents of Latin America - Grade 6 Textbook (I-11)

TABLE 16. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF KNOWING OUR NEIGHBORS IN LATIN AMERICA - GRADE 6
TEXTBOOK (I-12)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	5.14	5.2	16.	159	6.02	7.0
2.	19	5.49	5.9	17.	169	5.13	5.2
3.	29	4.87	4.7	18.	179	7.34	9.6
4.	39	5.86	6.7	19.	189	5.60	6.2
5.	49	6.91	8.8	20.	199	5.76	6.5
6.	59	4.34	-4.0	21.	209	5.66	6.3
7.	69	5.39	5.7	22.	219	6.37	7.7
8.	79	6.50	8.0	23.	229	5.12	5.2
9.	90	5.66	6.3	24.	239	5.39	5.7
10.	99	5.03	5.0	25.	249	5.44	5.8
11.	109	6.08	7.1	26.	259	5.81	6.6
12.	119	4.97	4.9	27.	269	5.54	6.0
13.	129	6.19	7.3	28.	279	5.40	5.8
14.	139	6.03	7.0	29.	289	5.18	5.3
15.	148	4.97	4.9	30.	299	5.29	5.5
Average raw score of 30 samples = 5.62 Grade Equivalent 6.2							

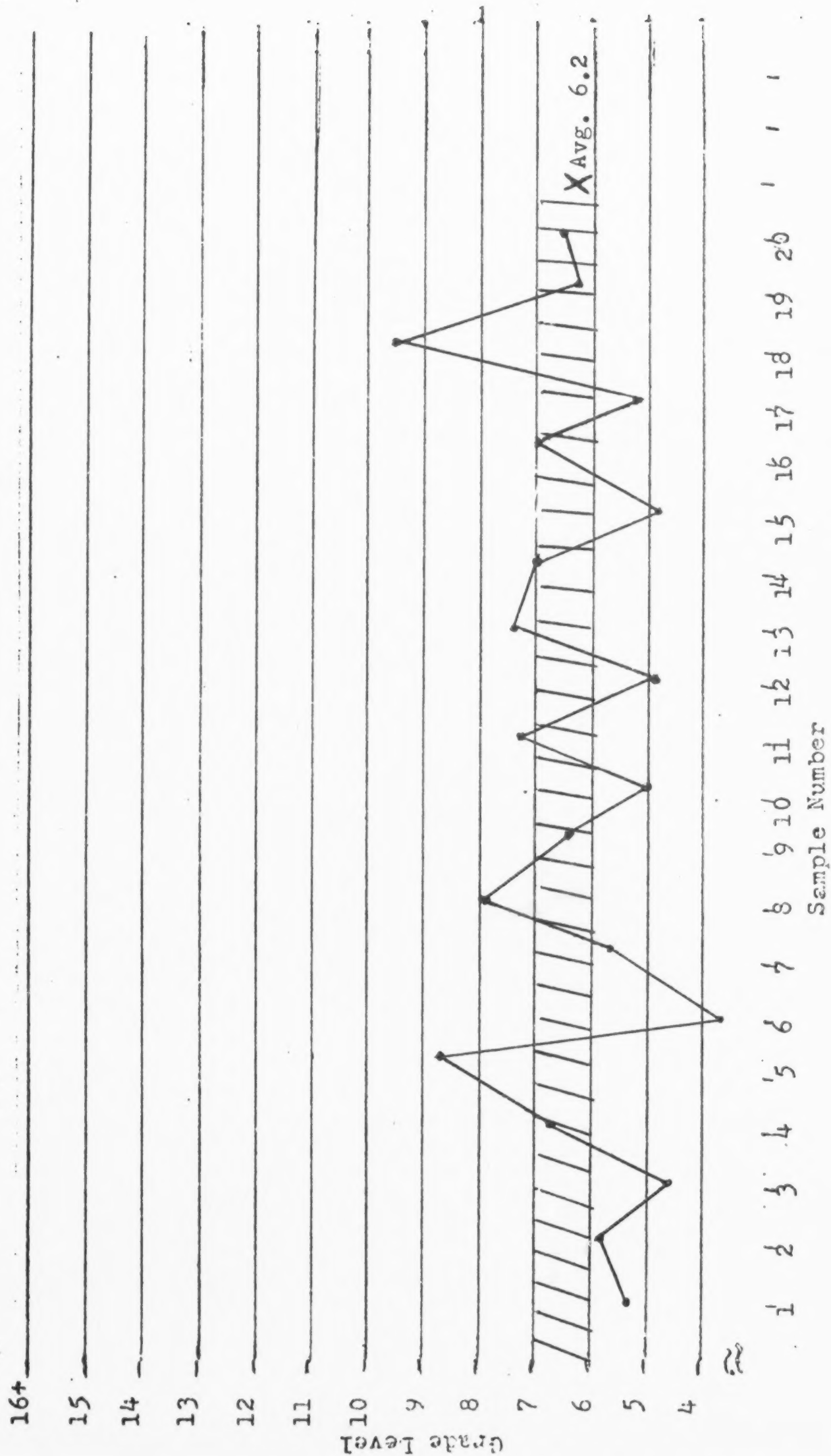


Figure 16. Grade Equivalents of Knowing Our Neighbors in Latin America - Grade 6 Textbook (I-12)

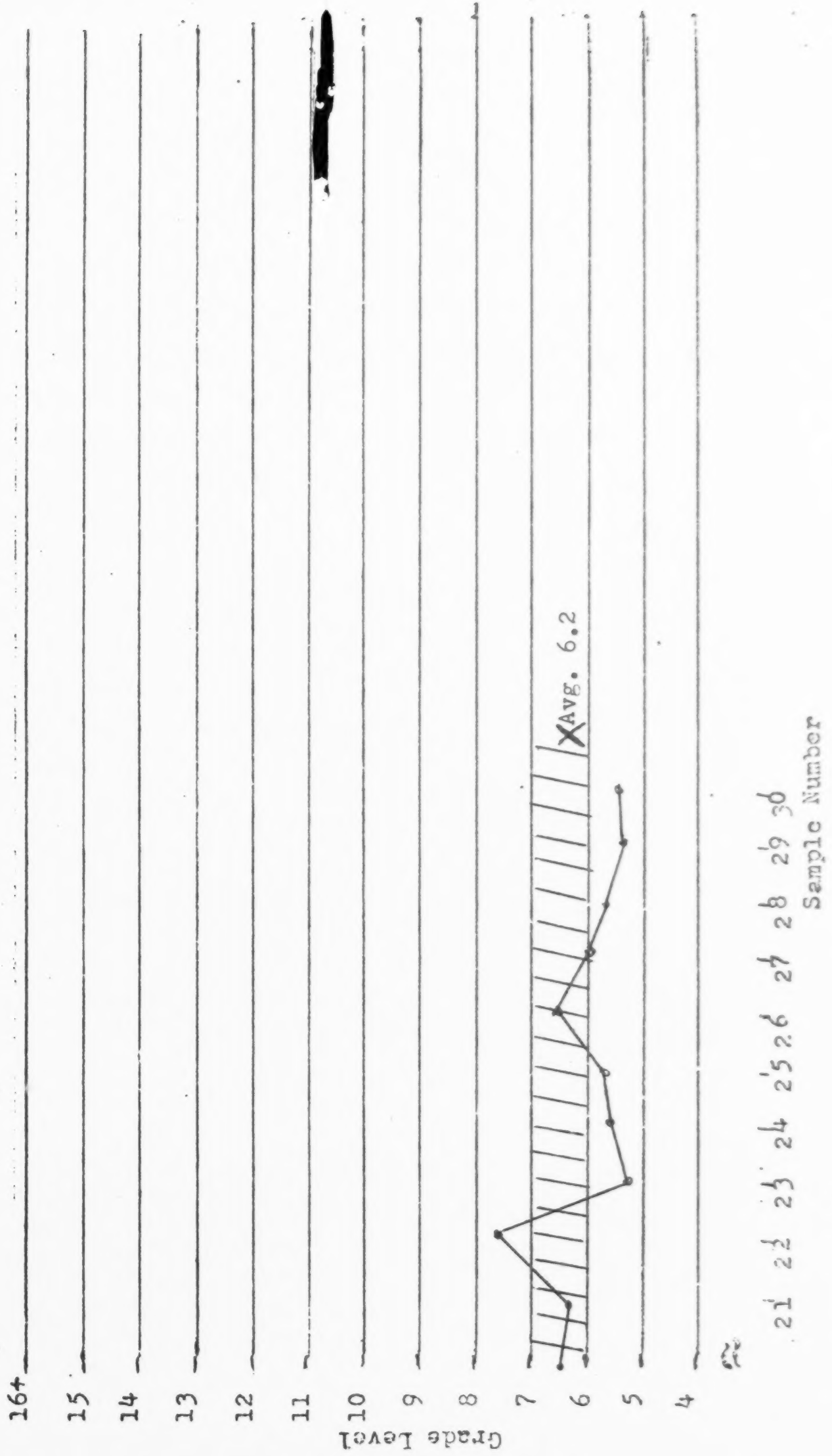


Figure 16. (continued)

TABLE 17. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LIVING AS AMERICAN NEIGHBORS - GRADE 6 TEXTBOOK (I-13)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	5.71	6.4	26.	259	5.18	5.3
2.	19	5.60	6.2	27.	268	6.37	7.7
3.	29	5.23	5.4	28.	279	4.97	4.9
4.	39	4.81	4.6	29.	289	5.13	5.2
5.	49	5.70	6.4	30.	299	5.45	5.9
6.	59	5.86	6.7	31.	309	5.98	6.9
7.	69	5.07	5.1	32.	319	5.29	5.5
8.	79	5.96	6.9	33.	329	4.86	4.7
9.	89	4.70	4.4	34.	339	5.97	6.9
10.	99	5.39	5.7	35.	349	5.16	5.3
11.	100	4.70	4.4	36.	359	6.02	7.0
12.	119	5.76	6.5	37.	369	5.87	6.7
13.	129	5.23	5.4	38.	379	5.92	6.8
14.	139	5.28	5.5	39.	389	6.09	7.1
15.	149	5.59	6.1	40.	399	5.23	5.4
16.	159	6.34	7.6	41.	409	5.91	6.8
17.	169	5.45	5.9	42.	419	4.60	4.2
18.	179	5.28	5.5	43.	429	5.82	6.6
19.	189	5.87	6.7	44.	438	5.27	5.5
20.	199	5.65	6.3	45.	449	6.49	7.9
21.	209	5.64	6.2				
22.	219	6.44	7.8				
23.	229	4.45	4.0				
24.	239	5.02	5.0				
25.	249	6.86	8.7				

Average raw score of 45 samples = 5.54 Grade Equivalent 6.0

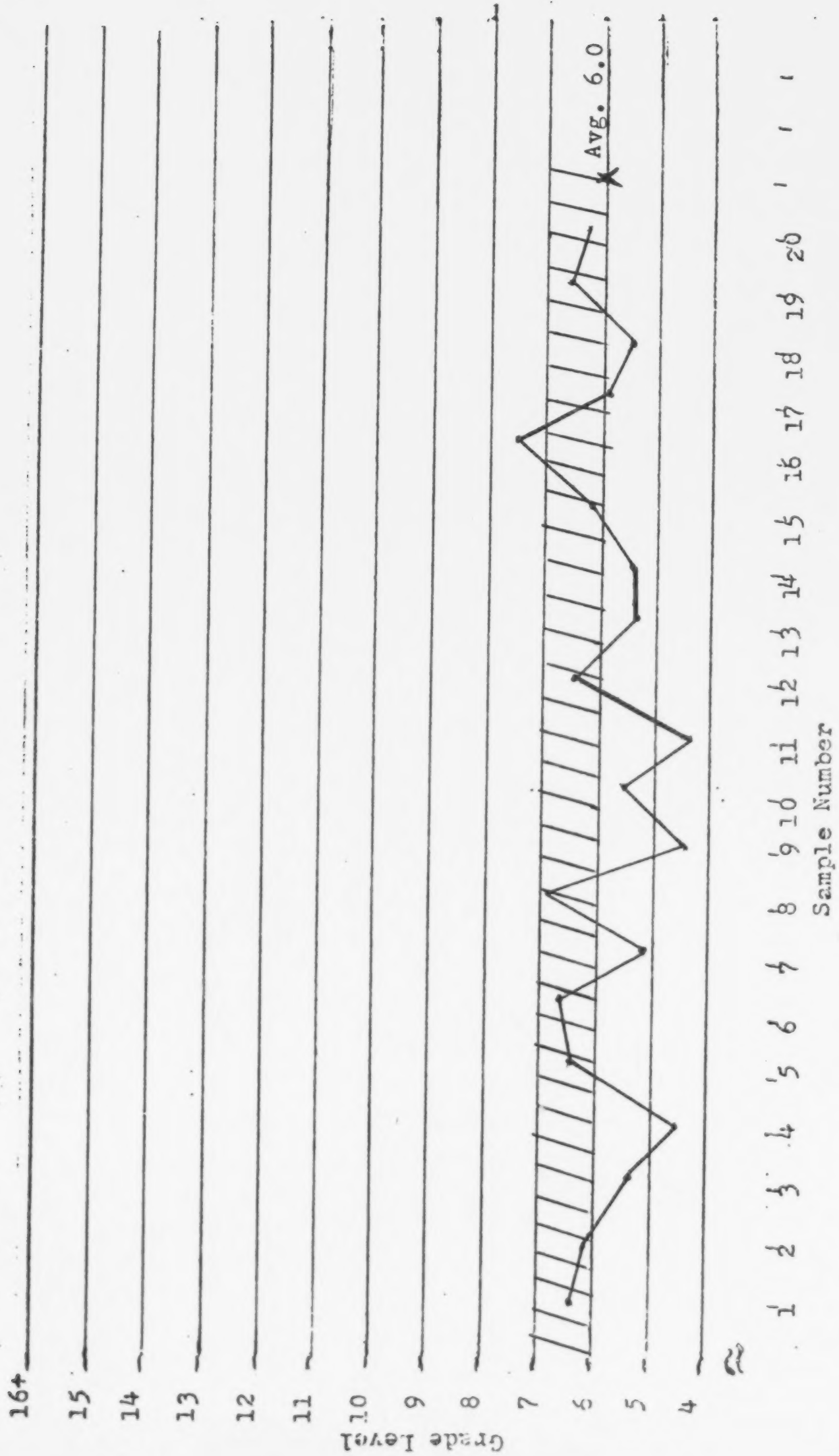


Figure 17. Grade Equivalents of Living As American Neighbors - Grade 6 Textbook (I-13)

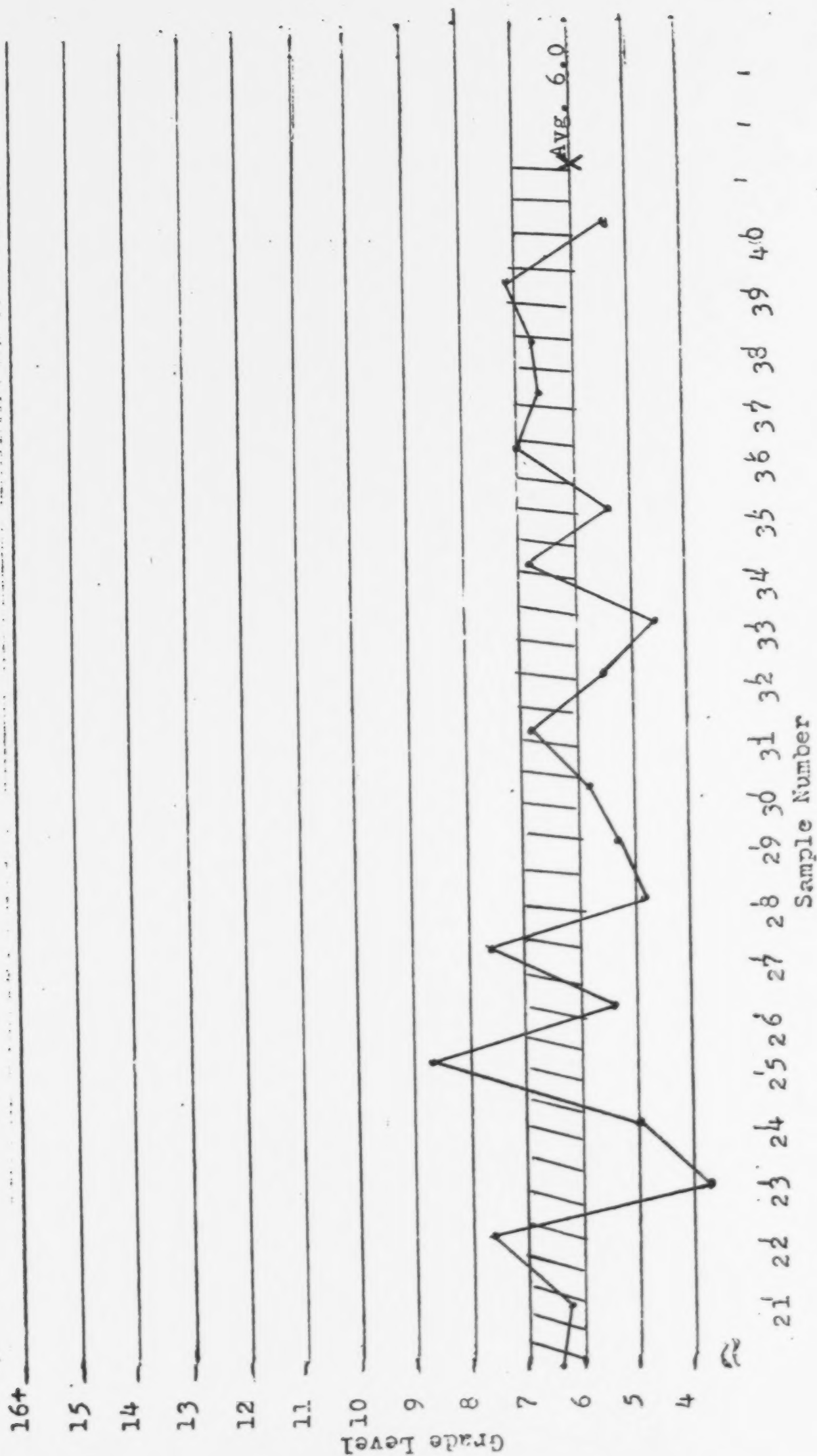


Figure 17. (continued)

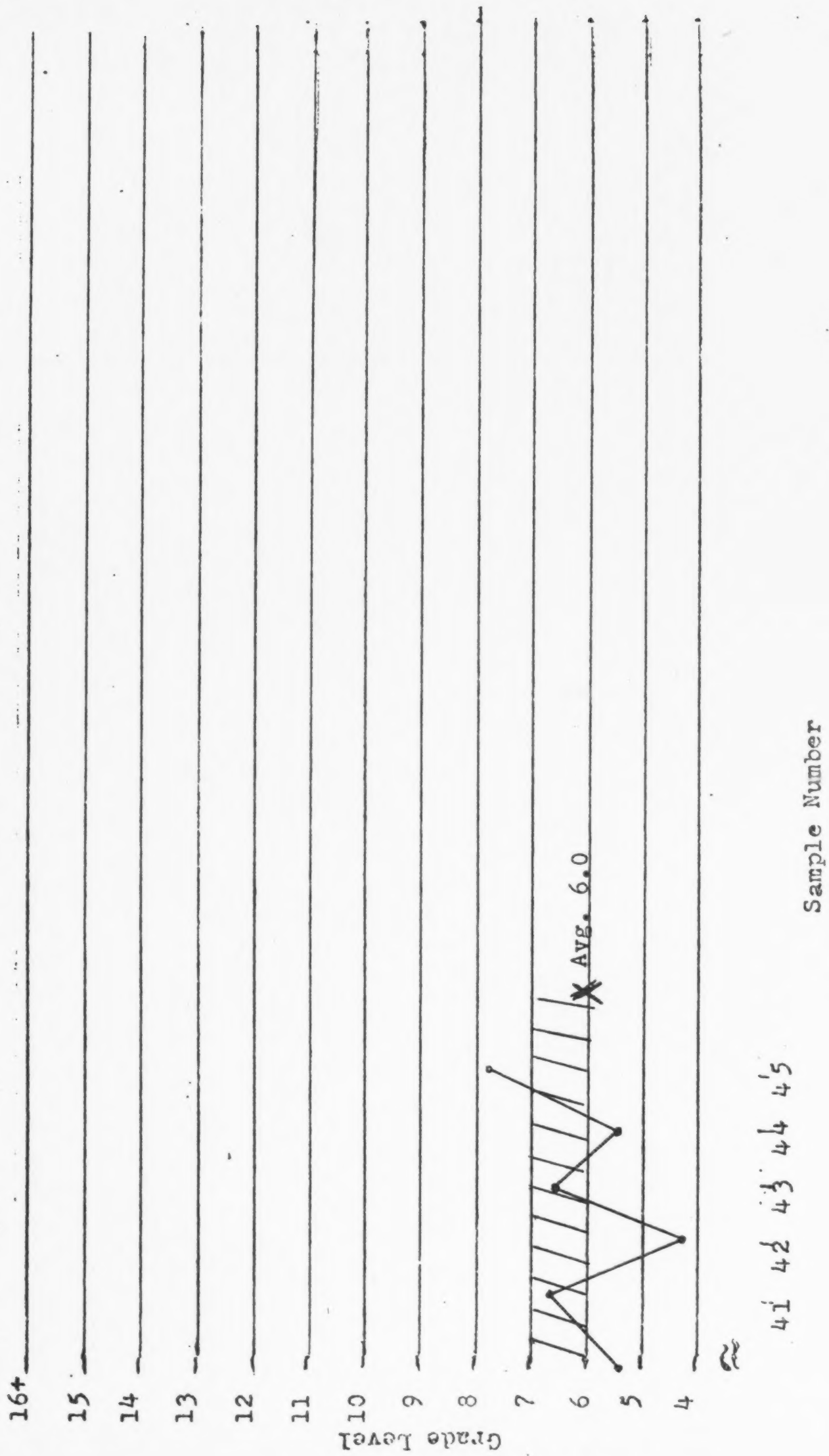


Figure 17. (continued)

TABLE 18. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LEARNING ABOUT LATIN AMERICA - GRADE 6 TEXTBOOK (I-14)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	4.96	4.9	16.	159	6.60	8.2
2.	19	5.40	5.8	17.	169	4.45	-4.0
3.	29	5.81	6.6	18.	179	5.49	5.9
4.	39	6.42	7.8	19.	189	5.64	6.2
5.	49	5.49	5.9	20.	199	5.59	6.1
6.	59	6.02	7.0	21.	209	6.59	8.1
7.	69	6.61	8.2	22.	219	5.54	6.0
8.	79	7.02	9.0	23.	229	5.27	5.5
9.	89	6.33	7.6	24.	239	6.33	7.6
10.	99	6.58	8.1	25.	249	5.44	5.8
11.	110	4.54	-4.0	26.	259	5.23	5.4
12.	119	5.29	5.5	27.	269	5.81	6.6
13.	129	6.02	7.0	28.	279	4.81	4.6
14.	139	7.02	9.0	29.	289	5.81	6.6
15.	149	6.54	8.0				

Average raw score of 29 samples = 5.82 Grade Equivalent 6.6

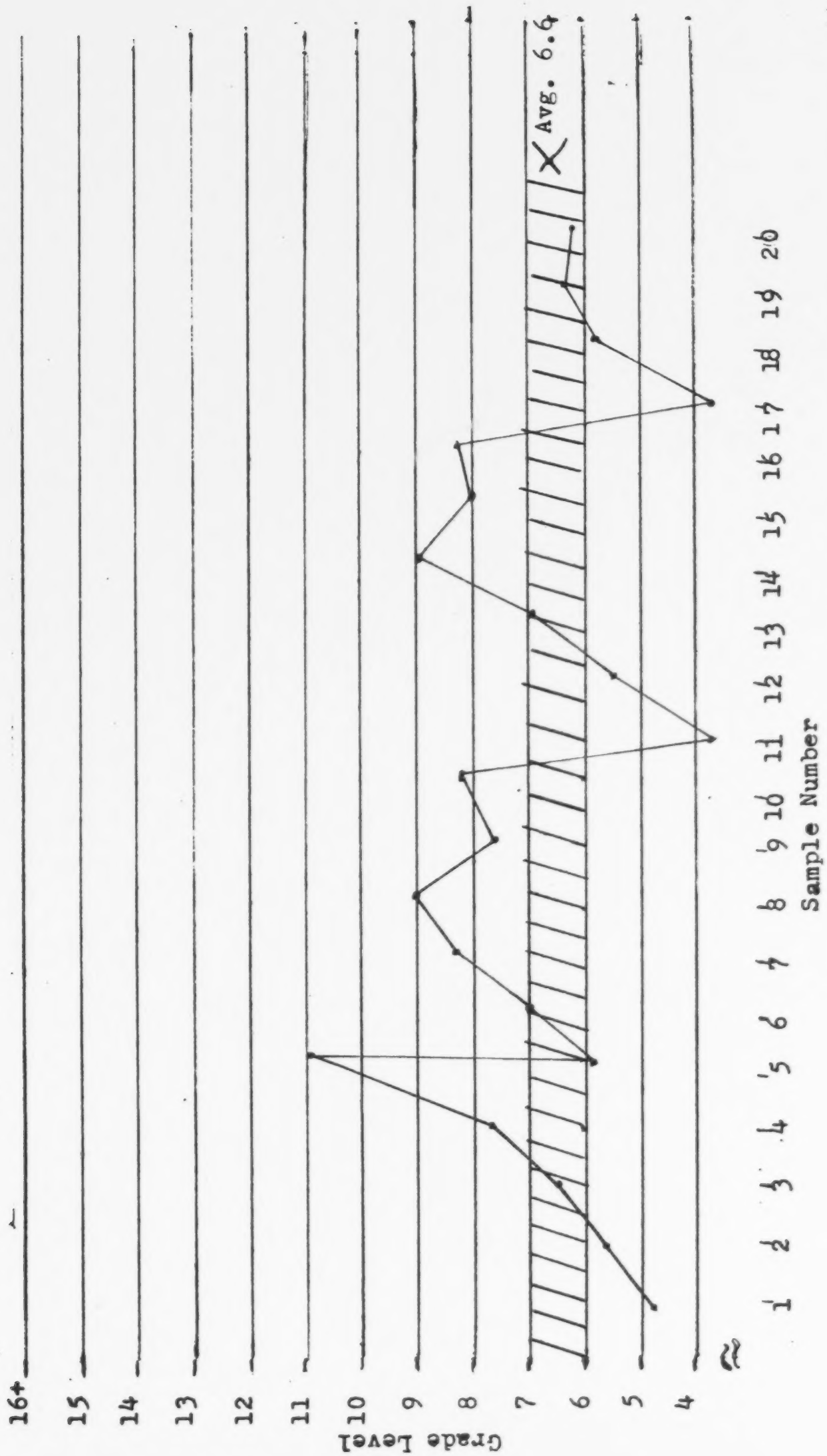


Figure 18. Grade Equivalents of Learning About Latin America - Grade 6 Textbook (I-14)

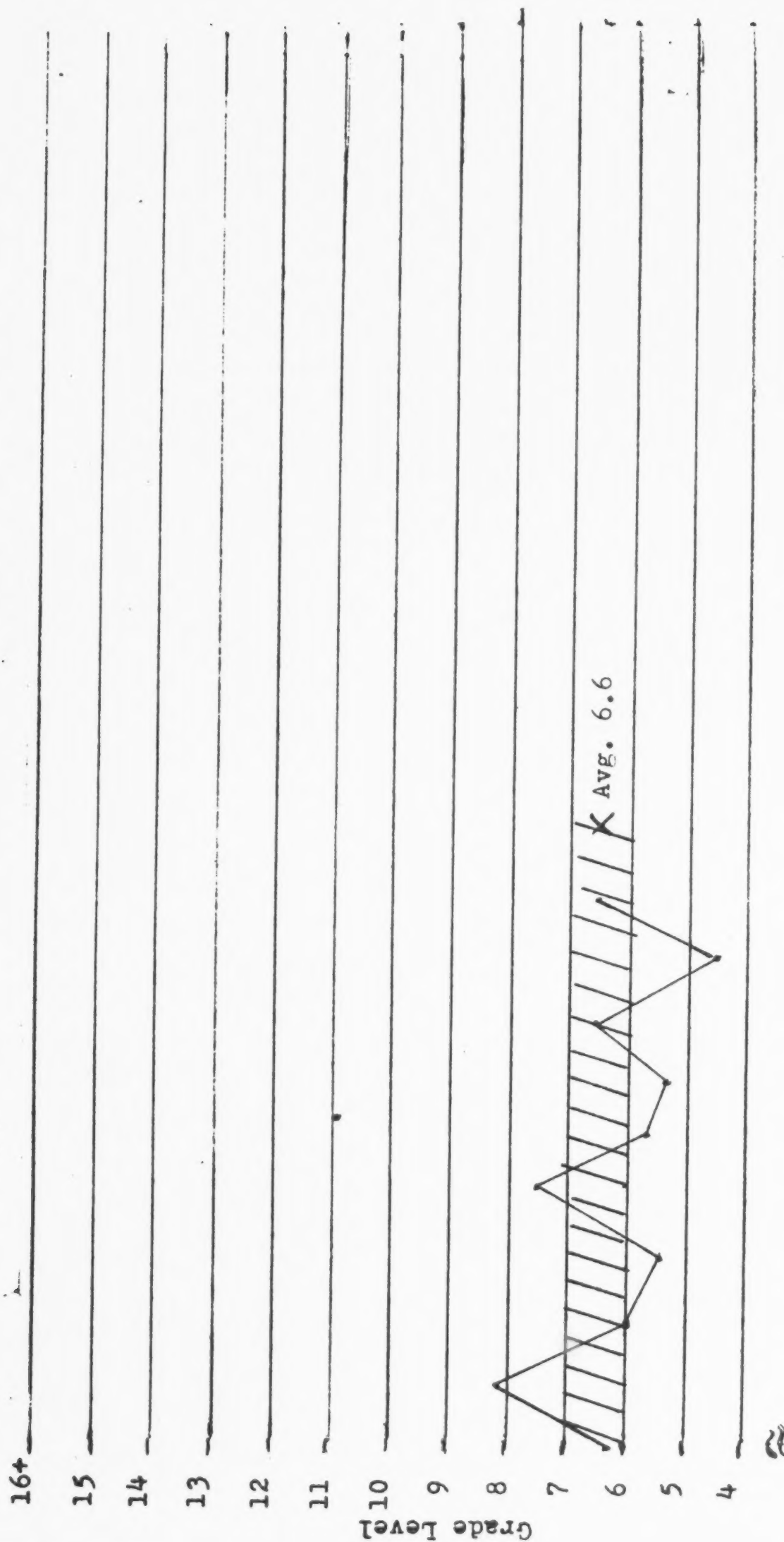


Figure 18. (continued)

TABLE 19. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF EXPLORING REGIONS OF LATIN AMERICA AND CANADA - GRADE 6
TEXTBOOK (1-15)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	16	5.49	5.9	21.	215	6.02	7.0
2.	26	8.66	12.3	22.	226	7.53	10.0
3.	36	7.91	10.8	23.	236	6.91	8.8
4.	46	6.48	7.9	24.	245	6.75	8.5
5.	56	7.06	9.1	25.	256	5.64	6.2
6.	66	5.55	6.1	26.	266	6.58	8.1
7.	76	6.65	8.3	27.	276	7.06	9.1
8.	86	5.75	6.5	28.	286	5.17	5.3
9.	96	5.92	6.8	29.	296	6.37	7.7
10.	106	6.07	7.1	30.	306	5.91	6.8
11.	116	6.98	8.9	31.	316	5.90	6.8
12.	126	5.43	5.8	32.	326	5.18	5.3
13.	136	5.59	6.1	33.	336	5.71	6.4
14.	146	7.79	10.5	34.	346	6.13	7.2
15.	156	6.37	7.7	35.	356	5.17	5.3
16.	166	6.49	7.9	36.	366	5.74	6.4
17.	176	6.55	8.1	37.	376	6.43	7.8
18.	186	5.98	6.9	38.	386	6.59	8.1
19.	196	6.08	7.1	39.	395	6.58	8.1
20.	206	6.34	7.6				

Average raw score of 39 samples = 6.32 Grade Equivalent 7.6

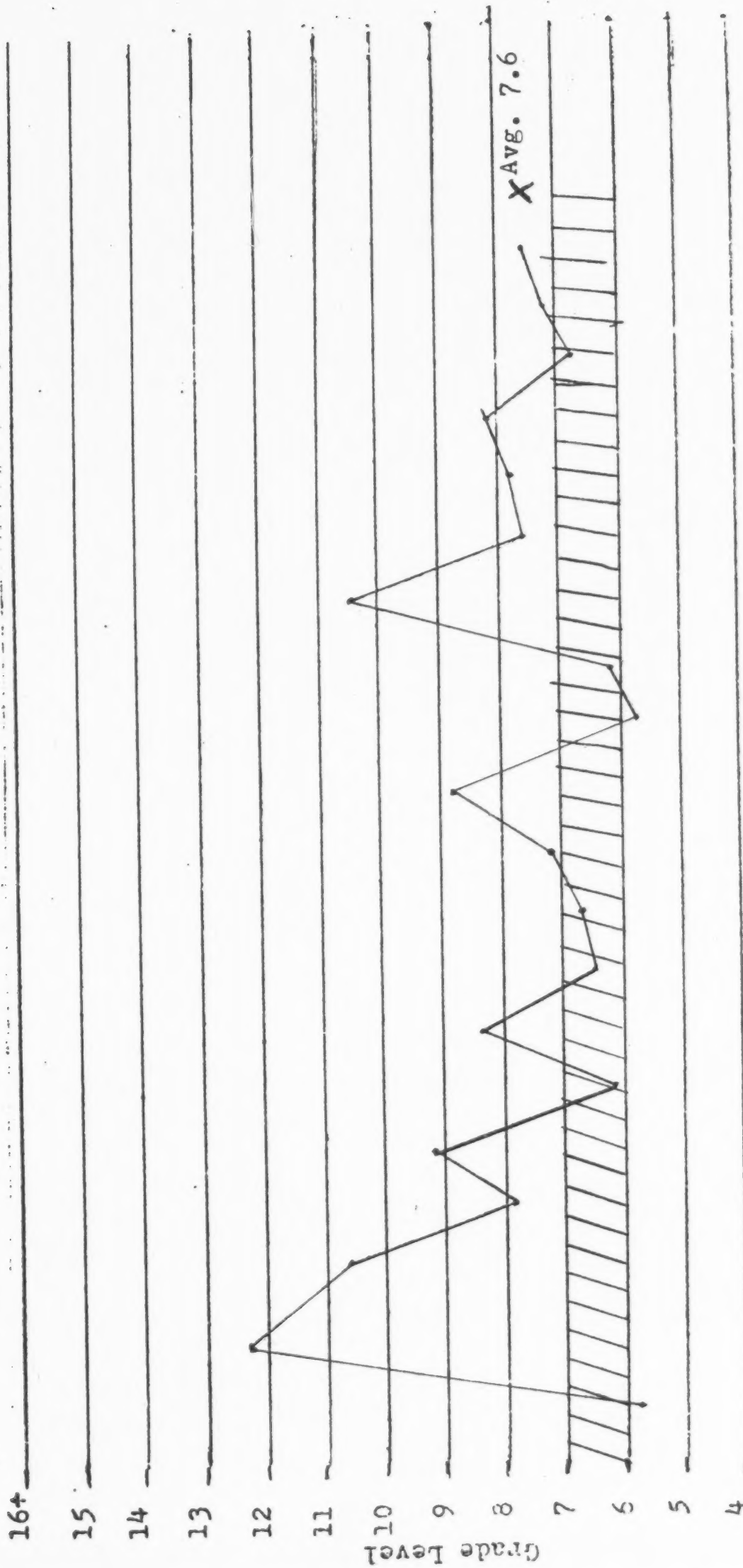


Figure 19 Grade Equivalents of Exploring Regions of Latin America and Canada - Grade 6
Textbook (I-15)

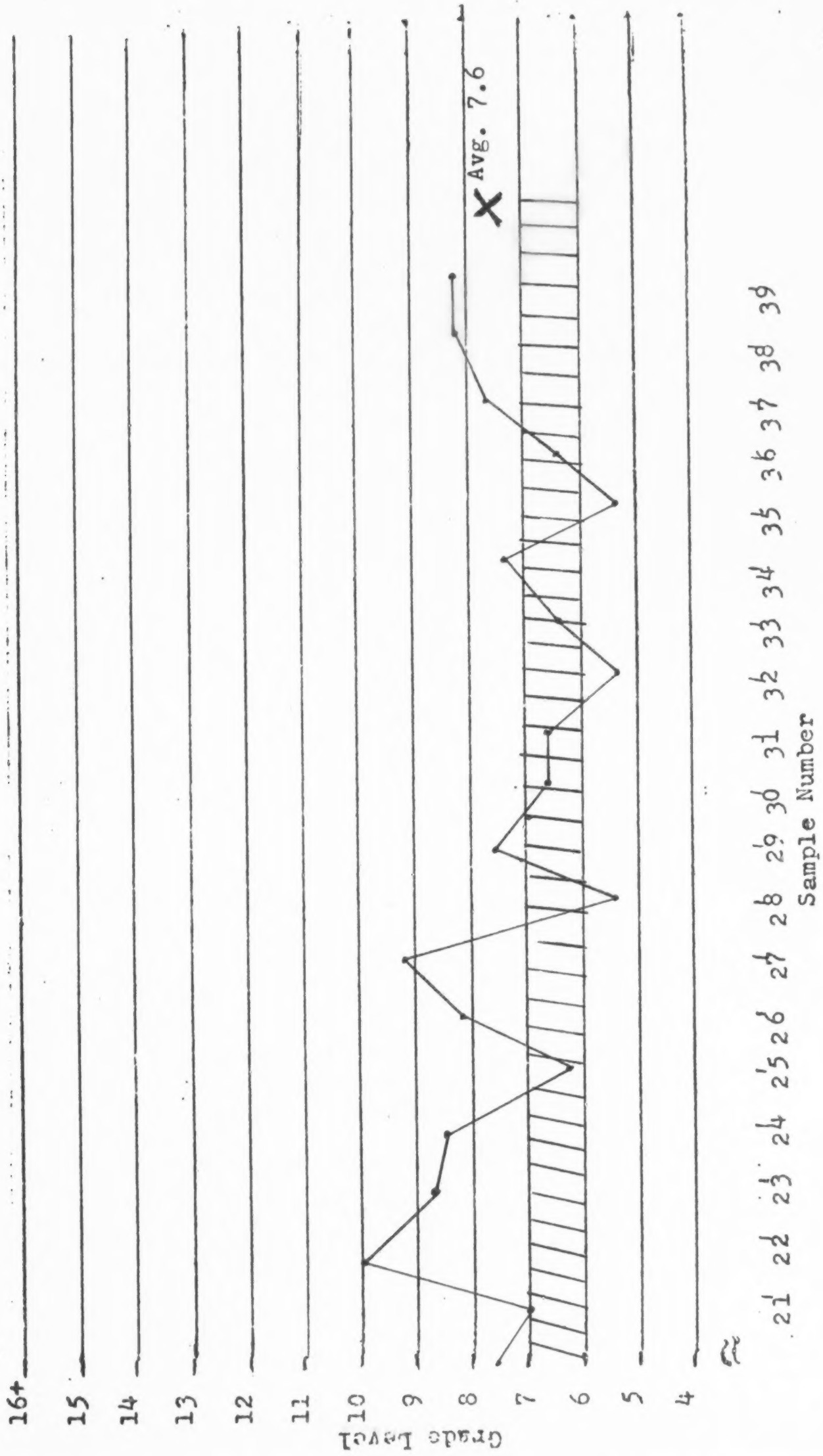


Figure 19. (continued)

TABLE 20. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF UNDERSTANDING LATIN AMERICA - GRADE 6 TEXTBOOK (I-16)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	10	6.44	7.8	26.	260	4.96	4.9
2.	20	4.81	4.6	27.	270	5.86	6.7
3.	30	5.70	6.4	28.	280	6.43	7.8
4.	39	4.43	4.0	29.	290	4.71	4.4
5.	50	5.23	5.4	30.	300	5.70	6.4
6.	60	5.75	6.5	31.	310	5.54	6.0
7.	70	5.28	5.5	32.	320	5.28	5.5
8.	80	5.58	6.1	33.	329	5.91	6.8
9.	90	7.16	9.3	34.	340	6.59	8.1
10.	100	5.65	6.3	35.	350	7.06	9.1
11.	110	5.39	5.7	36.	360	5.76	6.5
12.	120	5.74	6.4	37.	370	6.49	7.9
13.	130	5.90	6.8	38.	380	6.17	7.3
14.	140	5.74	6.4	39.	390	6.01	7.0
15.	150	5.12	5.2	40.	400	5.85	6.7
16.	160	5.28	5.5	41.	410	6.91	8.8
17.	170	6.12	7.2	42.	420	7.01	9.0
18.	180	6.60	8.2	43.	430	6.75	8.5
19.	190	6.23	7.4	44.	440	6.01	7.0
20.	200	4.86	4.7	45.	449	7.53	10.0
21.	209	5.81	6.6				
22.	220	5.07	5.1				
23.	230	6.16	7.3				
24.	240	5.59	6.1				
25.	250	4.81	4.6				

Average raw score of 45 samples = 5.84 Grade Equivalent 6.6

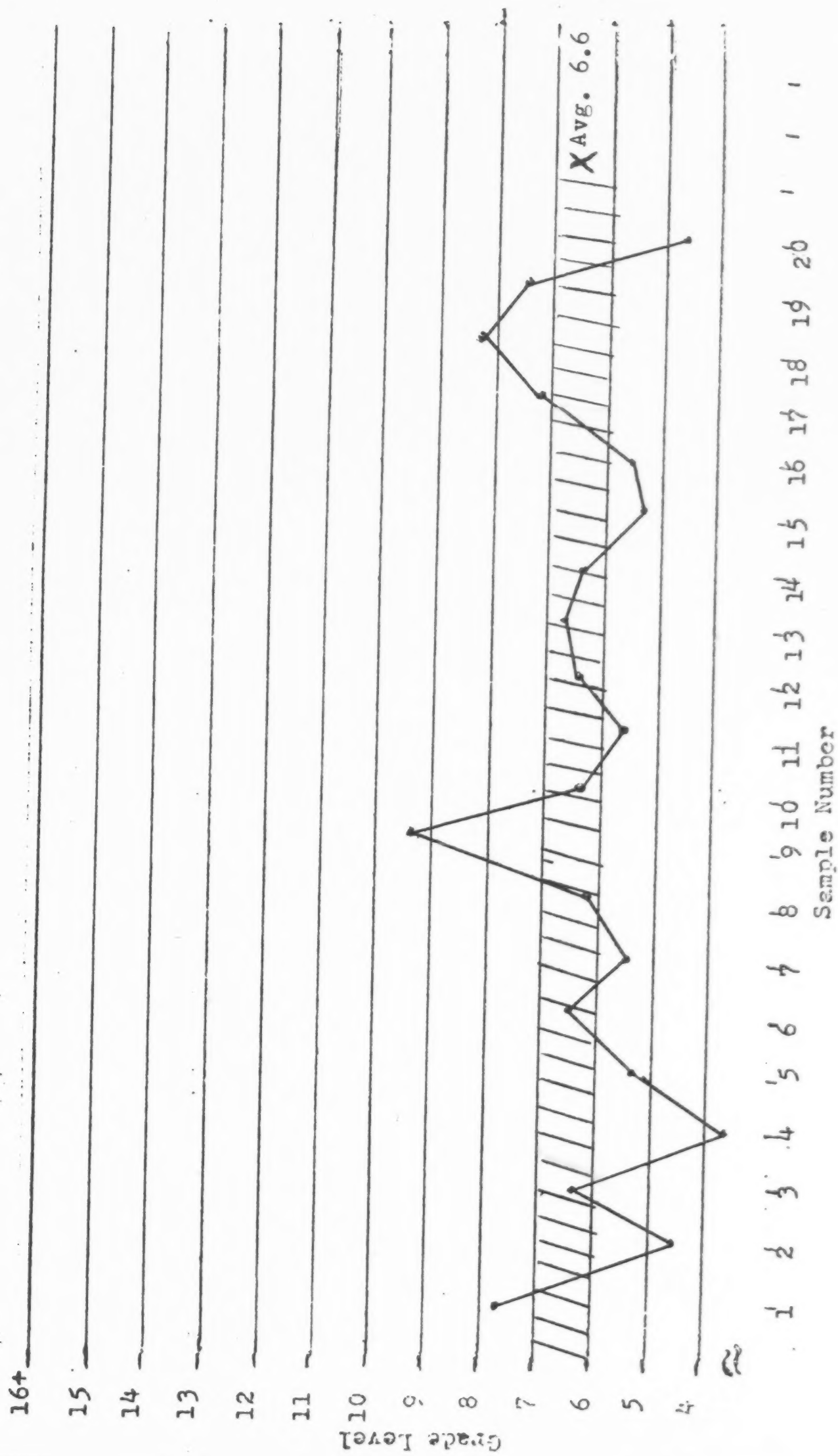
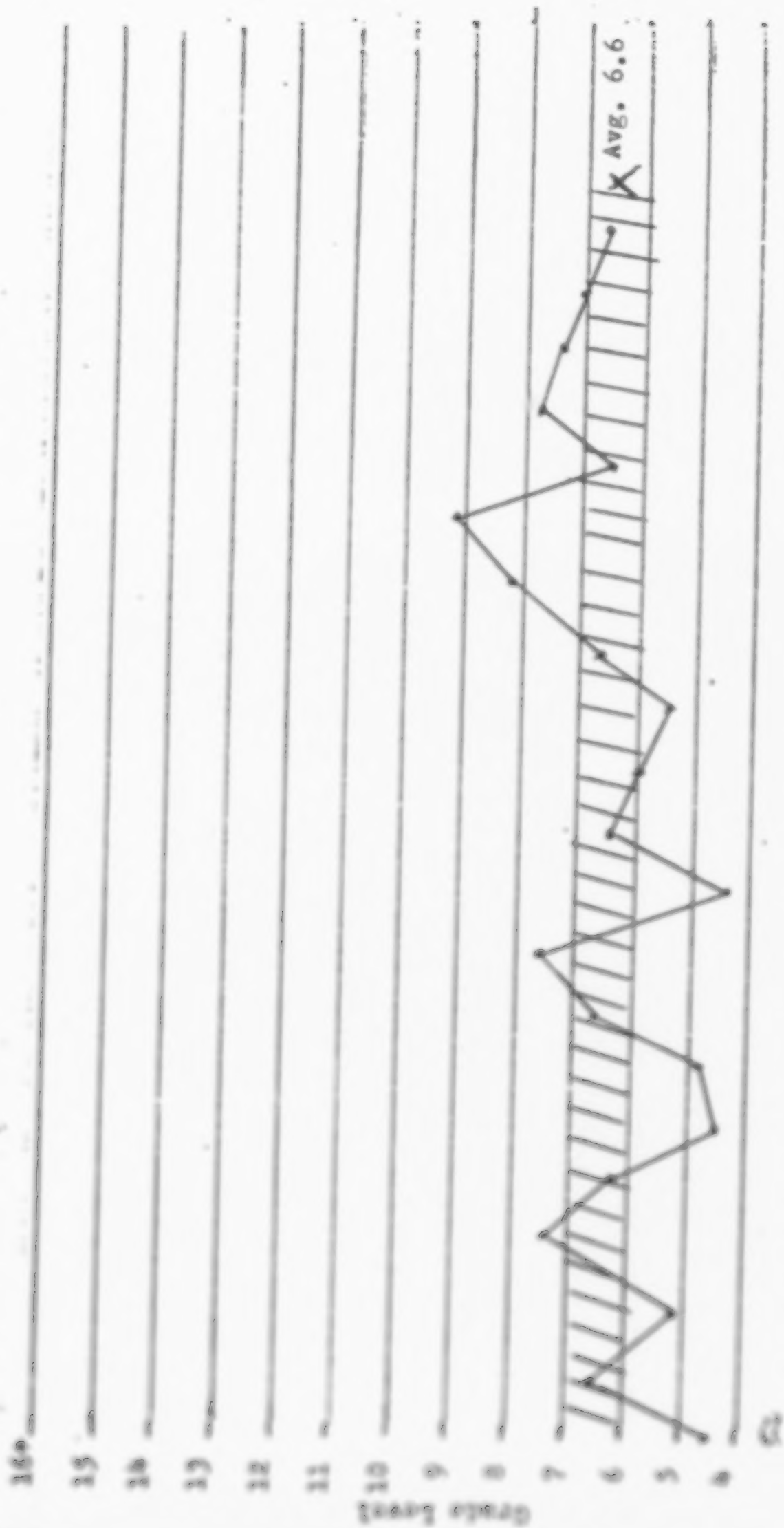


Figure 20. Grade Equivalents of Understanding Latin America - Grade 6 Textbook (I-16)



21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Sample Number

Figure 20. (continued)

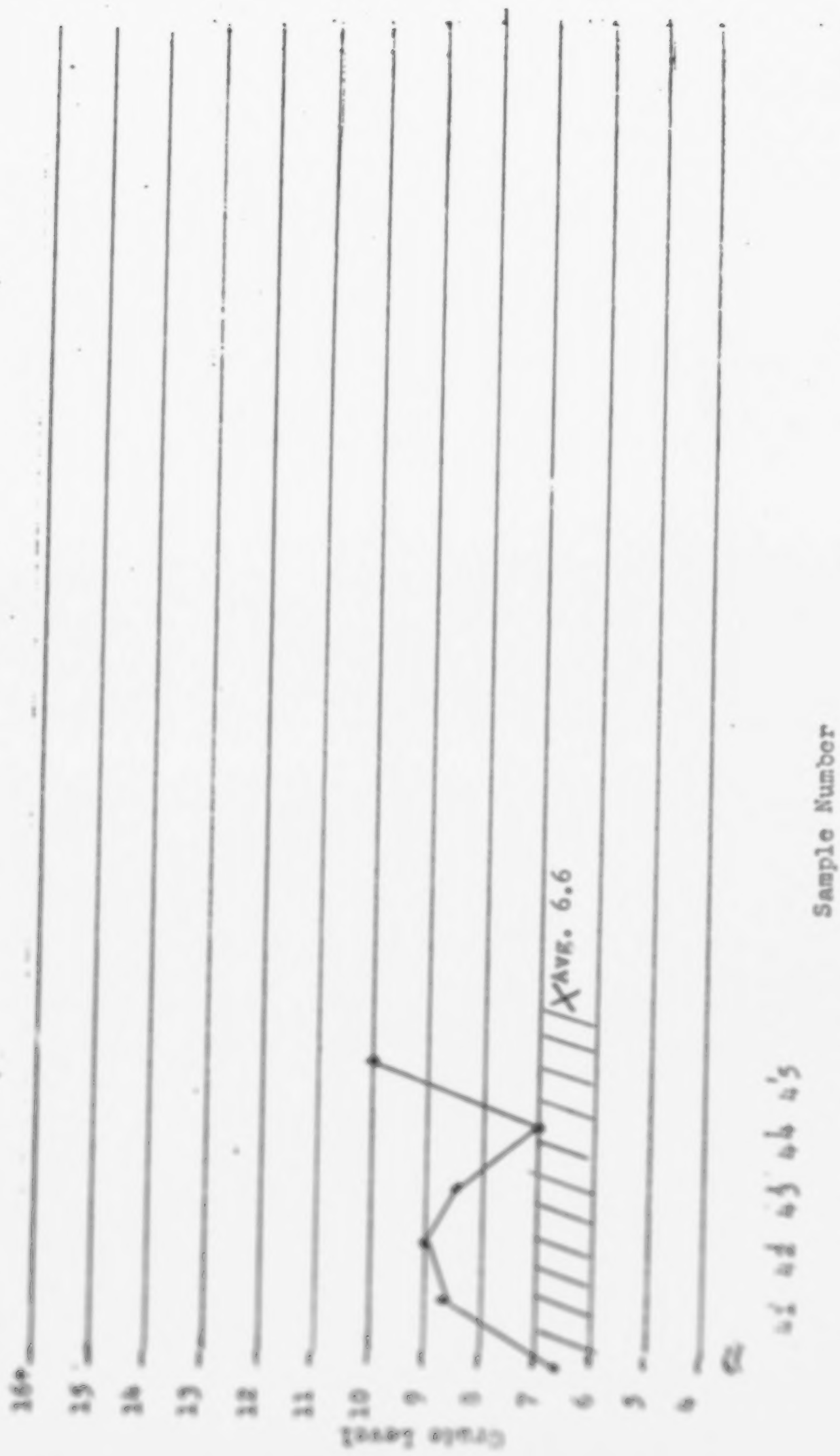


Figure 20. (continued)

TABLE 21. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF IN LATIN AMERICAN LANDS - GRADE 6 TEXTBOOK (I-17)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	6.48	7.9	26.	259	6.28	7.5
2.	19	5.75	6.5	27.	269	7.01	9.0
3.	29	5.23	5.4	28.	279	6.11	7.2
4.	39	5.59	6.1	29.	289	5.96	6.9
5.	49	7.27	9.5	30.	299	5.45	5.9
6.	59	5.39	5.7	31.	309	6.01	7.0
7.	69	7.59	10.1	32.	319	5.33	5.6
8.	79	5.49	5.9	33.	329	5.39	5.7
9.	89	6.07	7.1	34.	339	4.81	4.6
10.	99	5.11	5.2	35.	349	6.45	7.9
11.	109	6.08	7.1	36.	359	6.54	8.0
12.	119	5.08	5.1	37.	369	6.64	8.2
13.	129	7.41	9.8	38.	380	5.02	5.0
14.	139	5.49	5.9	39.	389	6.53	8.0
15.	149	5.33	5.6	40.	399	6.55	8.1
16.	159	4.91	4.8	41.	408	5.92	6.8
17.	169	5.64	6.2	42.	419	7.85	10.7
18.	179	5.74	6.4	43.	429	5.01	5.0
19.	189	5.75	6.5	44.	439	5.49	5.9
20.	199	6.85	8.7	45.	449	5.95	6.9
21.	208	7.11	9.2	46.	459	6.08	7.1
22.	219	6.02	7.0				
23.	229	6.75	8.5				
24.	239	5.96	6.9				
25.	249	5.96	6.9				
Average raw score of 46 samples = 6.01 Grade Equivalent 7.0							

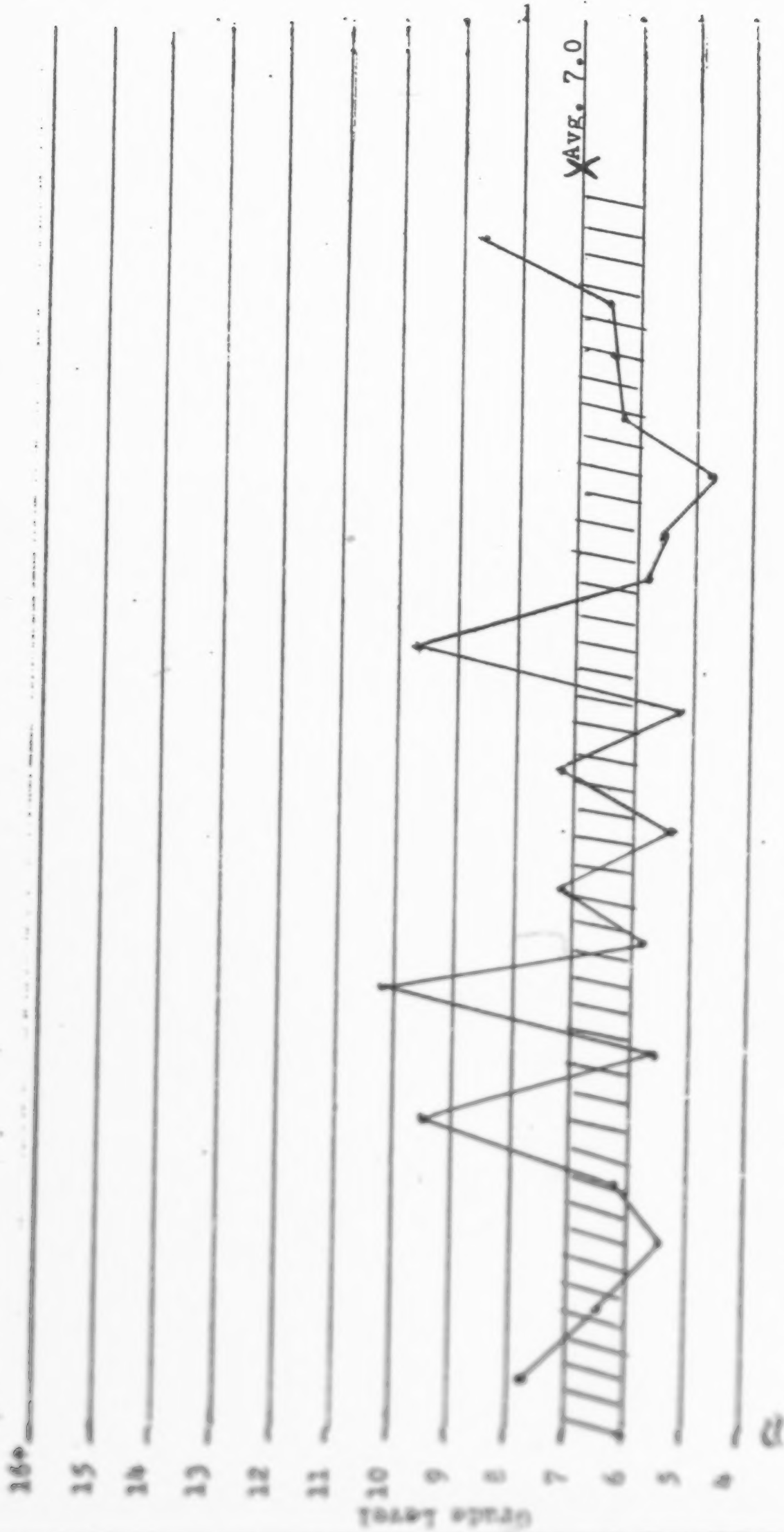


Figure 21. Grade Equivalents of In Latin American Lands - Grade 6 Textbook (I-17)

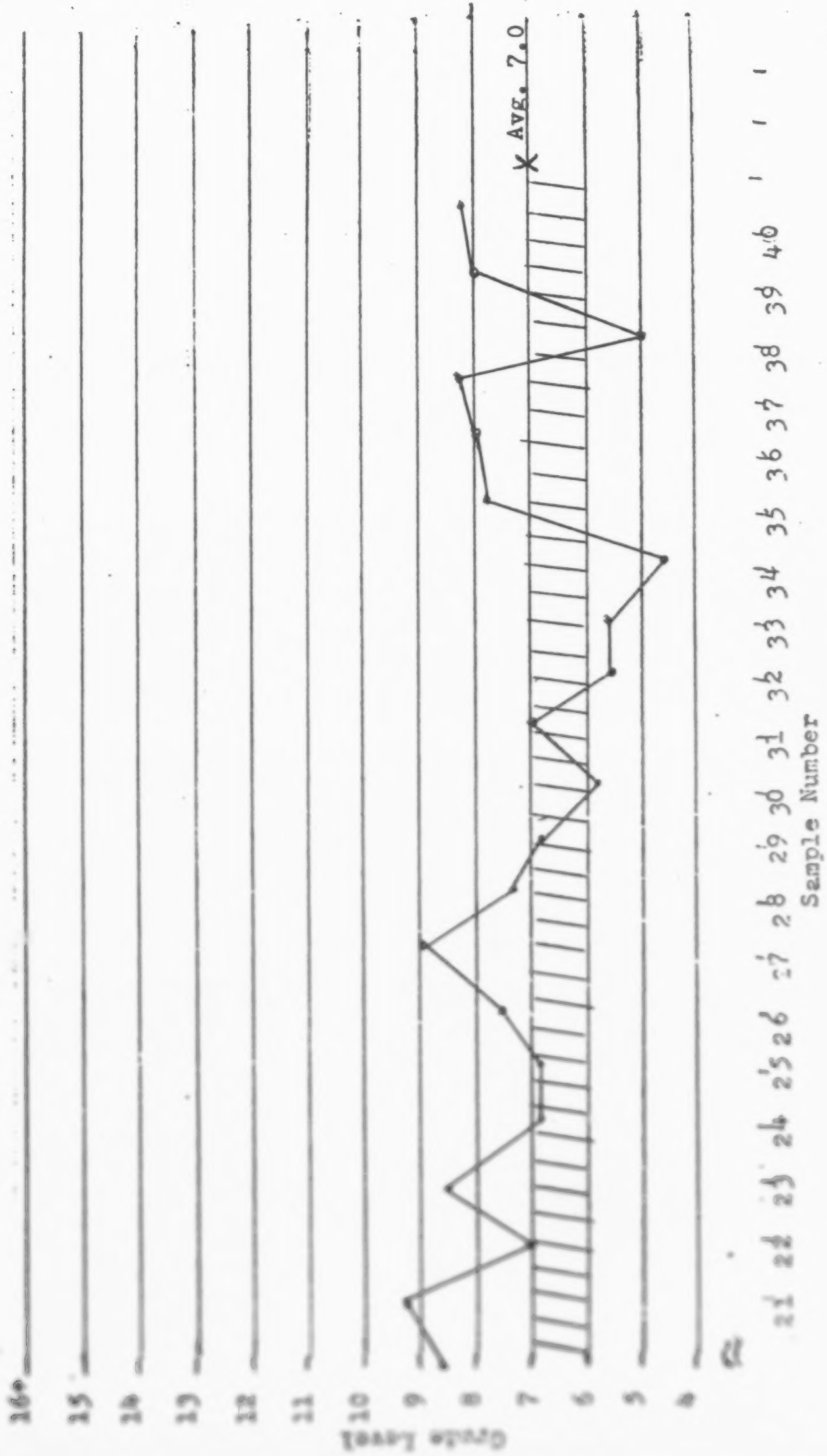
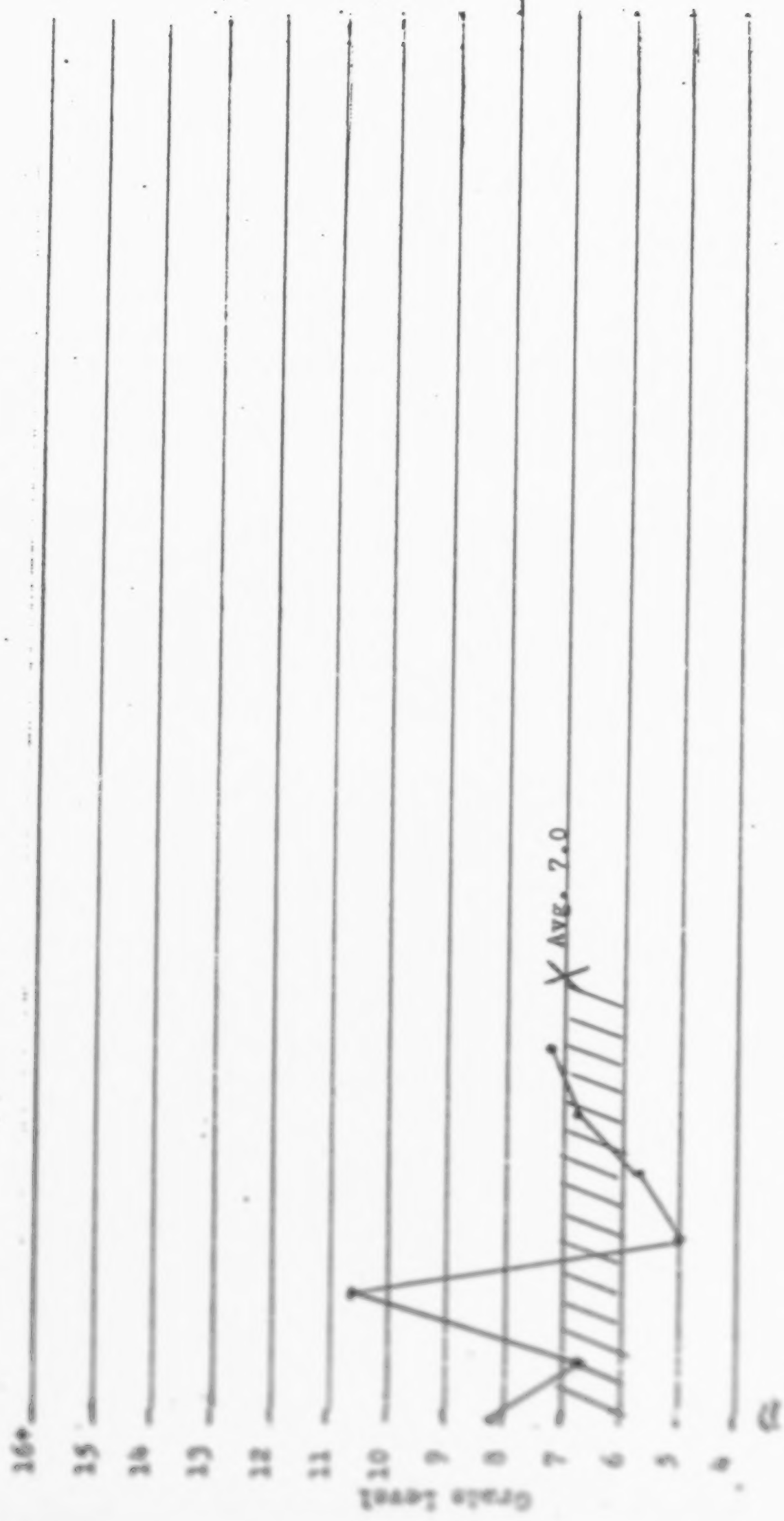


Figure 21. (continued)



Sample Number

41 42 43 44 45 46

Figure 21. (continued)

TABLE 22. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LONG AGO IN THE OLD WORLD - GRADE 6 TEXTBOOK (I-18)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	6	6.74	8.4	21.	206	6.74	8.4
2.	16	5.38	5.7	22.	216	7.31	9.6
3.	26	5.90	6.8	23.	226	5.81	6.6
4.	36	5.64	6.2	24.	237	7.10	9.2
5.	46	6.69	8.3	25.	246	8.06	11.1
6.	56	7.06	9.1	26.	256	7.90	10.8
7.	66	6.87	8.7	27.	266	6.12	7.2
8.	76	4.96	4.9	28.	276	5.64	6.2
9.	86	6.18	7.3	29.	286	5.49	5.9
10.	96	5.23	5.4	30.	296	7.07	9.1
11.	106	7.06	9.1	31.	306	5.91	6.8
12.	116	6.42	7.8	32.	316	6.59	8.1
13.	126	4.80	4.6	33.	326	6.80	8.6
14.	137	6.28	7.5	34.	337	6.42	7.8
15.	146	6.43	7.8	35.	346	6.65	8.3
16.	156	5.49	5.9				
17.	166	6.32	7.6				
18.	177	6.00	7.0				
19.	187	6.17	7.3				
20.	197	6.17	7.3				

Average raw score of 35 samples = 6.33 Grade Equivalent 7.6

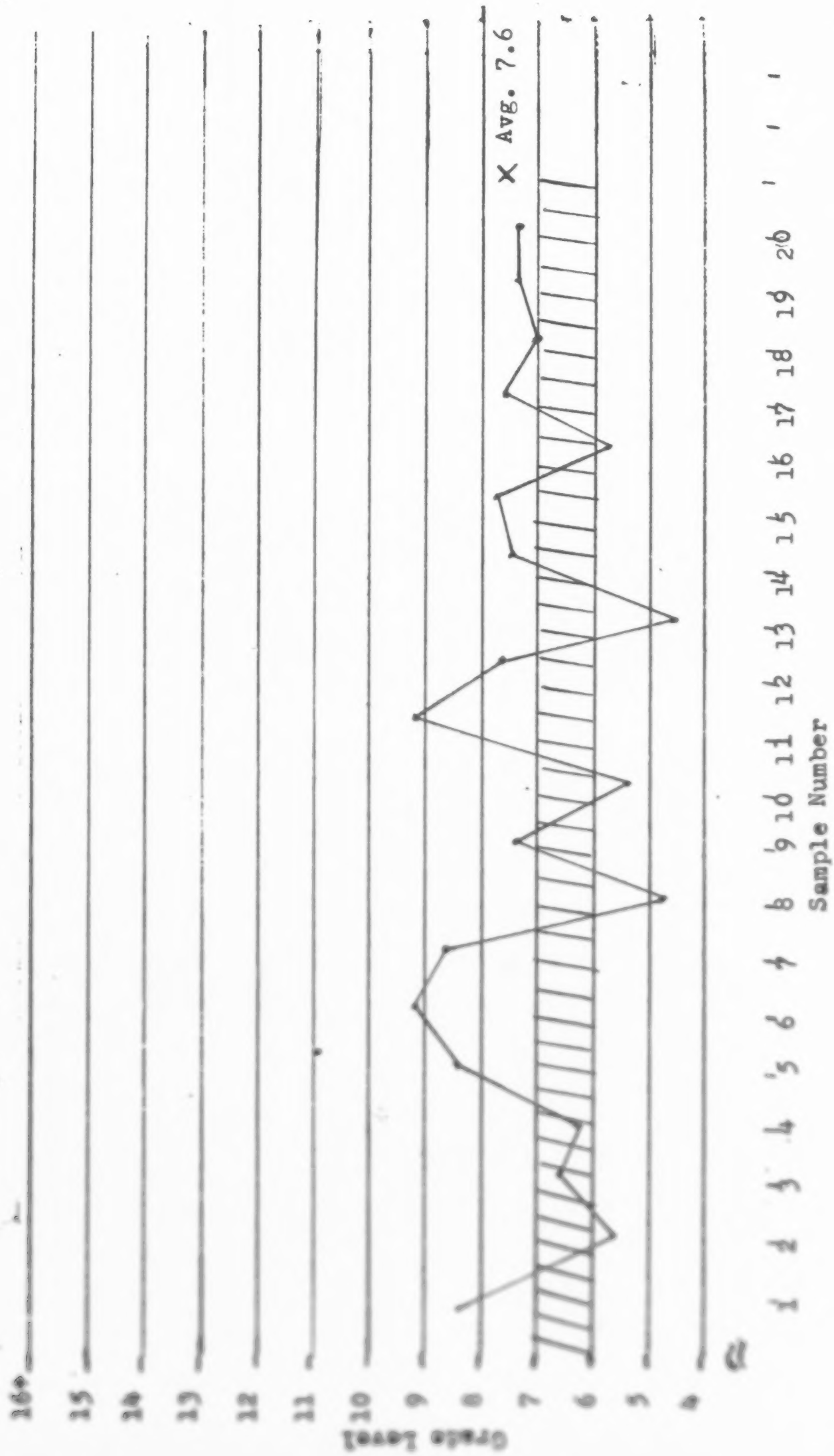
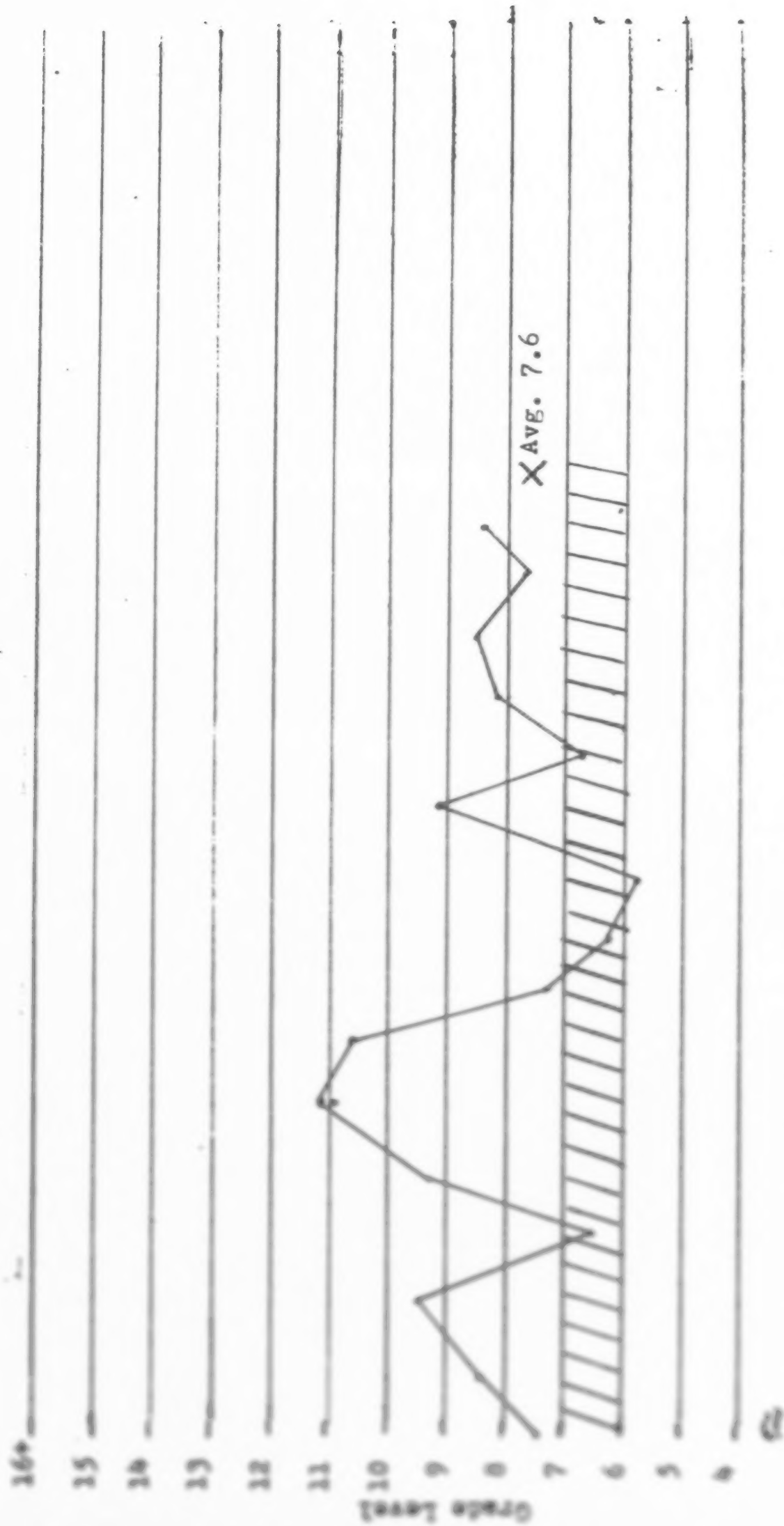


Figure 22. Grade Equivalents of Long Ago in the Old World - Grade 6 Textbook (I-18)



21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

Figure 22. (continued)

TABLE 23. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF LIVING IN THE OLD WORLD - GRADE 6 TEXTBOOK (I-19)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	8	6.50	8.0	31.	308	5.60	6.2
2.	18	5.64	6.2	32.	318	5.75	6.5
3.	28	4.70	4.4	33.	328	5.55	6.1
4.	38	5.59	6.1	34.	338	5.79	6.5
5.	48	5.54	6.0	35.	348	5.66	6.3
6.	58	5.87	6.7	36.	357	5.54	6.0
7.	68	4.97	4.9	37.	368	4.55	4.1
8.	78	6.08	7.1	38.	378	5.86	6.7
9.	87	5.07	5.1	39.	388	5.01	5.0
10.	98	5.64	6.2	40.	397	5.39	5.7
11.	108	6.08	7.1	41.	408	5.34	5.6
12.	118	5.07	5.1	42.	418	4.87	4.7
13.	128	6.33	7.6	43.	428	5.92	6.8
14.	138	6.28	7.5	44.	438	5.92	6.8
15.	148	5.69	6.3	45.	448	5.40	5.8
16.	158	6.22	7.4	46.	458	5.70	6.4
17.	168	7.12	9.2	47.	468	5.59	6.1
18.	177	6.02	7.0	48.	478	5.48	5.9
19.	188	5.54	6.0	49.	488	4.92	4.8
20.	198	7.07	9.1	50.	498	5.24	5.4
21.	208	5.55	6.1	51.	508	6.33	7.6
22.	218	5.39	5.7	52.	518	5.93	6.8
23.	228	6.66	8.3				
24.	238	6.55	8.1				
25.	247	5.71	6.4				
26.	258	5.96	6.9				
27.	268	5.74	6.4				
28.	277	5.74	6.4				
29.	288	6.33	7.6				
30.	298	5.22	5.4				

Average raw score of 52 samples = 5.72 Grade Equivalent 6.4

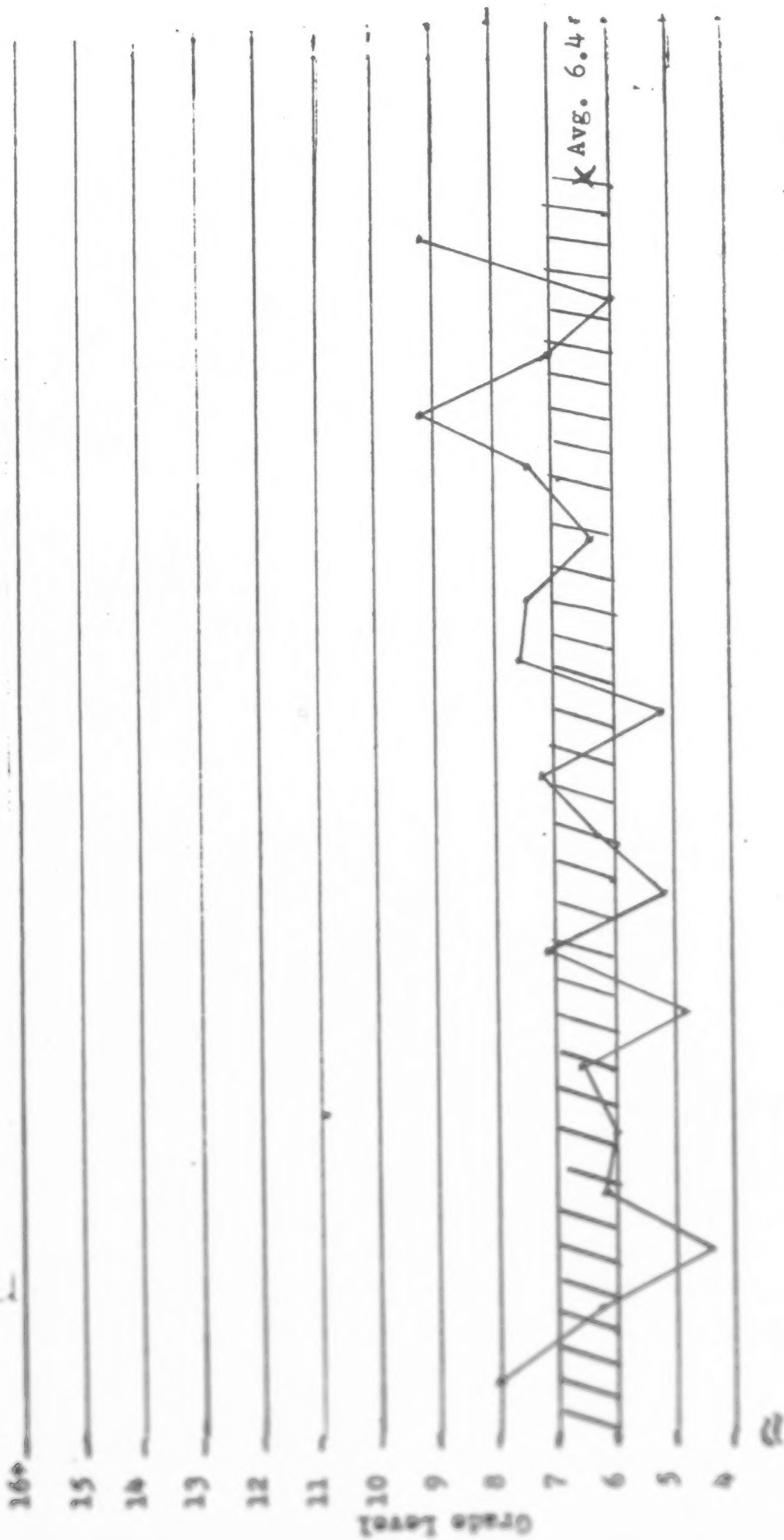


Figure 23. Grade Equivalents of Living in the Old World - Grade 6 Textbook (I-19)

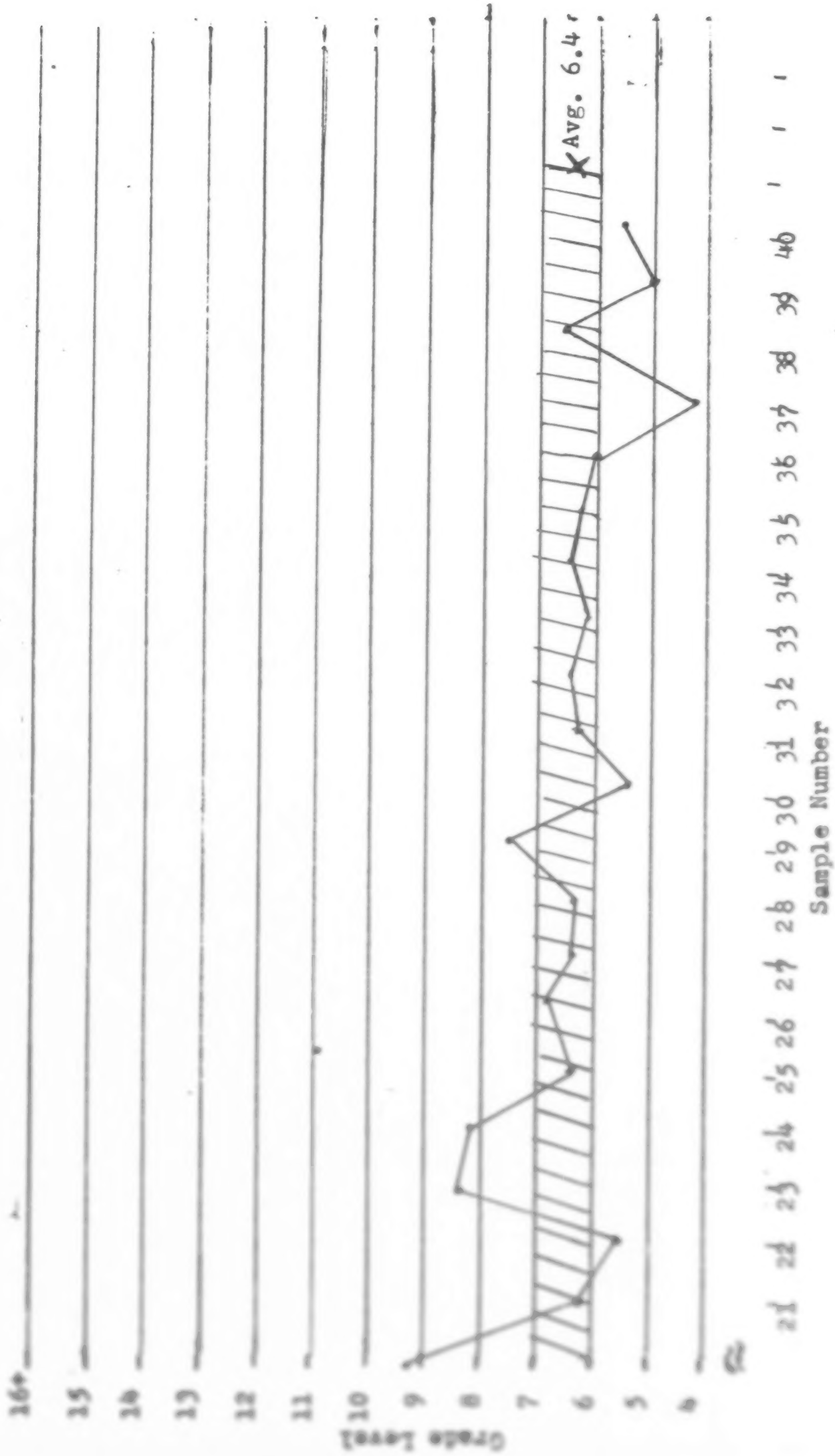
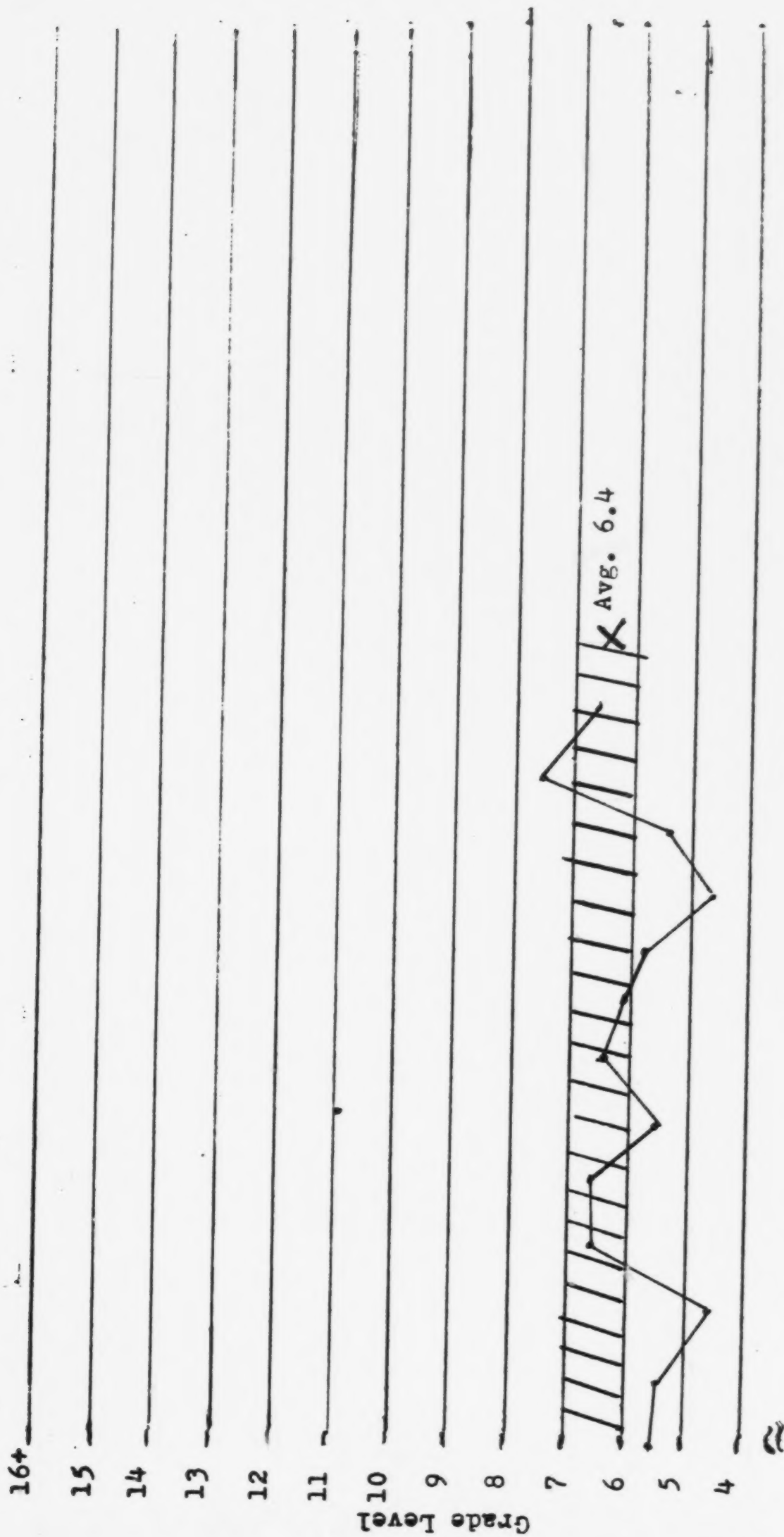


Figure 23. (continued)



41 42 43 44 45 46 47 48 49 50 51 52
Sample Number

Figure 23. (continued)

TABLE 24. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF WORLD BACKGROUND FOR AMERICAN HISTORY - GRADE 6 TEXTBOOK
(I-20)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	16	6.91	8.8	21.	216	4.81	4.6
2.	26	6.07	7.1	22.	226	5.86	6.7
3.	36	6.17	7.3	23.	236	6.54	8.0
4.	46	5.86	6.7	24.	246	5.81	6.6
5.	56	6.37	7.7	25.	256	5.60	6.2
6.	66	6.44	7.8	26.	266	6.23	7.4
7.	76	6.50	8.0	27.	276	5.14	5.2
8.	86	5.92	6.8	28.	285	5.23	5.4
9.	96	5.07	5.1	29.	296	5.49	5.9
10.	106	4.96	4.9	30.	306	7.34	9.6
11.	116	5.18	5.3	31.	316	5.55	6.1
12.	126	6.28	7.5	32.	326	5.71	6.4
13.	136	5.70	6.4	33.	336	5.18	5.3
14.	146	6.13	7.2	34.	346	4.70	4.4
15.	156	5.45	5.9	35.	356	5.55	6.1
16.	166	5.45	5.9	36.	366	5.80	6.6
17.	176	5.70	6.4	37.	376	6.33	7.6
18.	186	5.97	6.9	38.	386	5.08	5.1
19.	196	5.74	6.4	39.	396	7.06	9.1
20.	206	7.02	9.0	40.	406	6.84	8.6

Average raw score of 40 samples = **5.87** Grade Equivalent 6.7

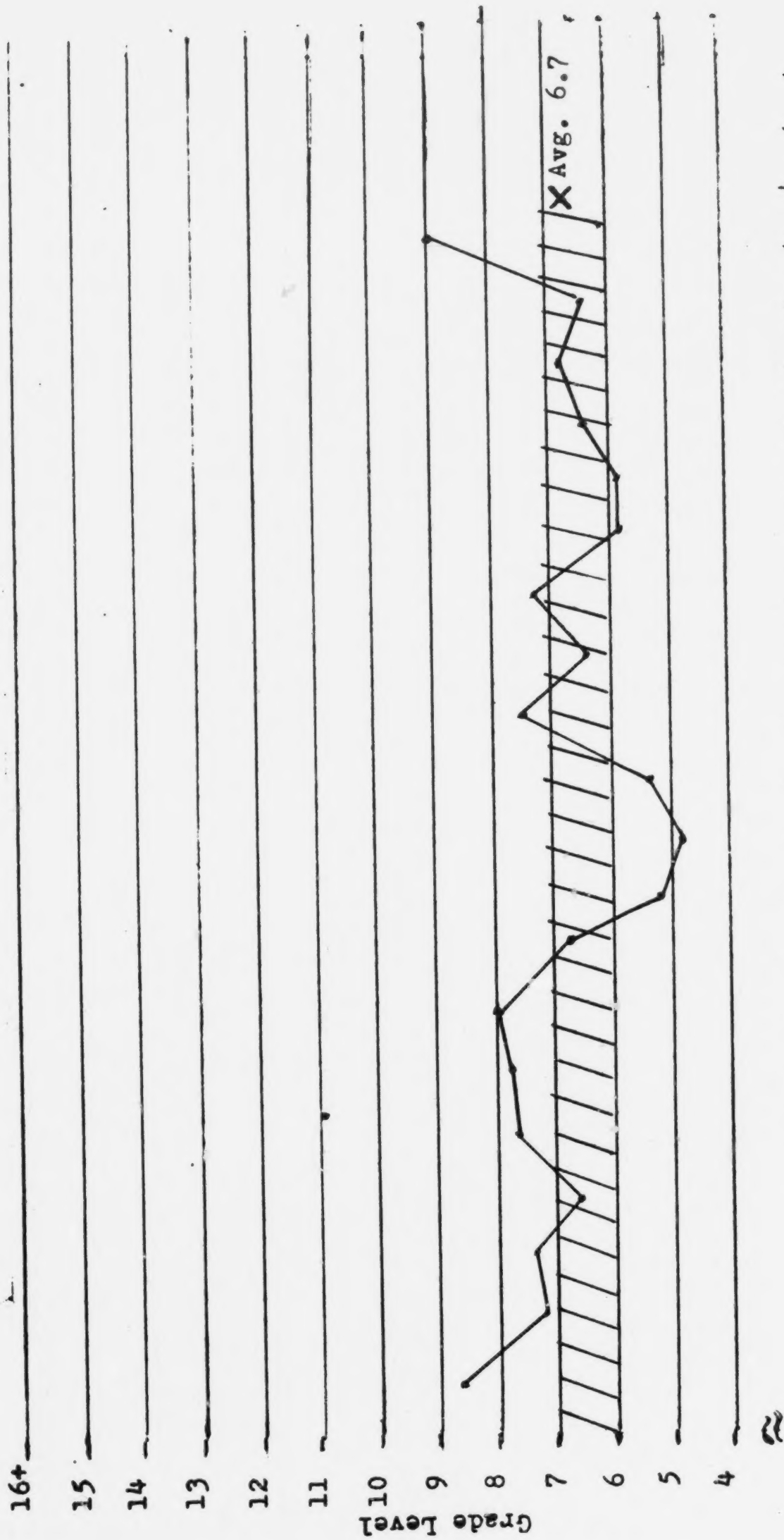


Figure 24. Grade Equivalents of World Background for American History - Grade 6 Textbook (I-20)

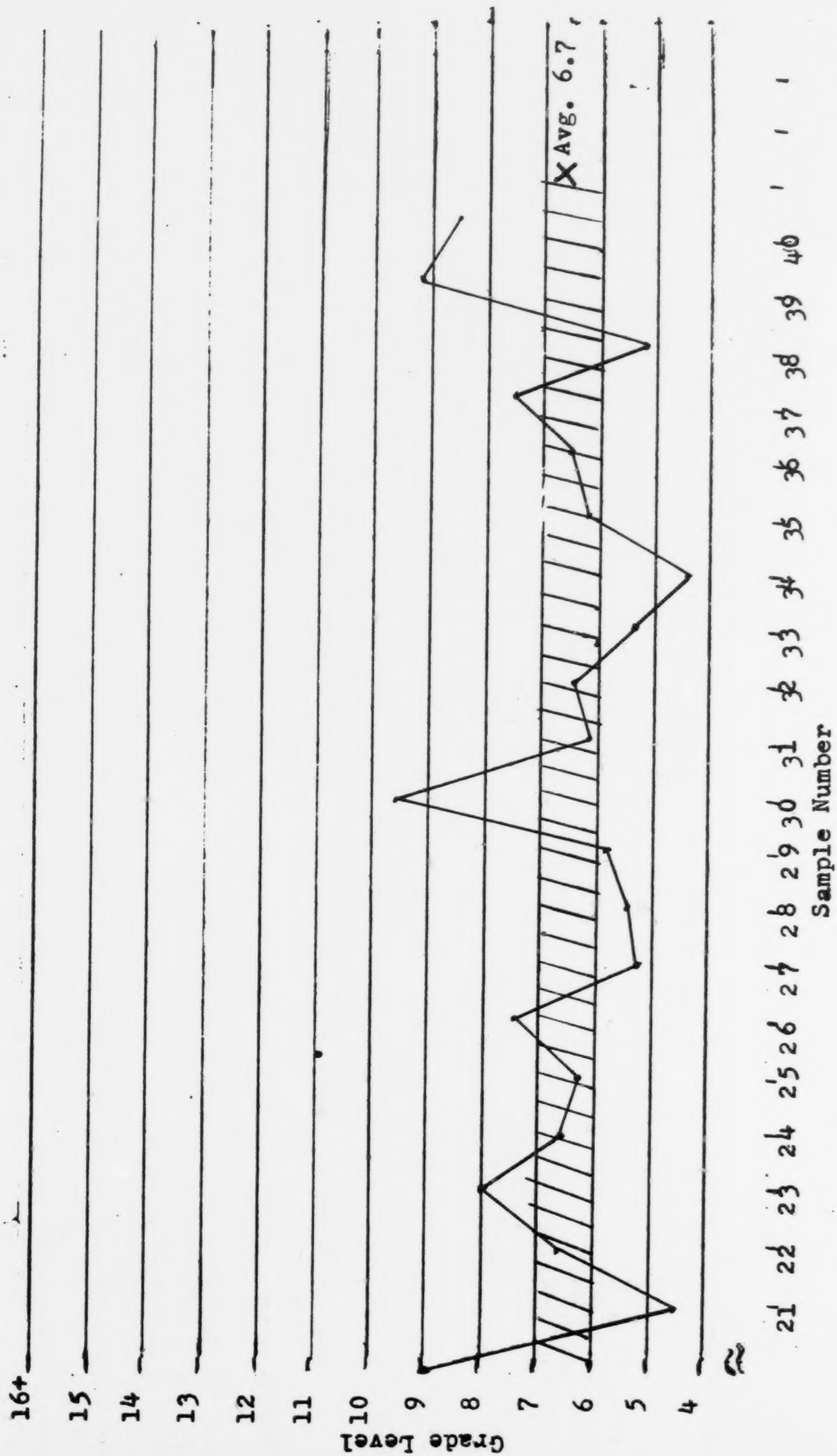


Figure 24. (continued)

TABLE 25. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF EUROPE AND THE SOVIET UNION - GRADE 6 TEXTBOOK (I-21)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	10	6.55	8.1	16.	160	5.12	5.2
2.	19	5.86	6.7	17.	170	5.08	5.1
3.	30	5.69	6.3	18.	180	7.28	9.5
4.	40	6.52	8.0	19.	190	6.01	7.0
5.	50	5.38	5.7	20.	200	6.13	7.2
6.	60	5.33	5.6	21.	210	5.02	5.0
7.	70	6.06	7.1	22.	220	5.69	6.3
8.	80	5.70	6.4	23.	230	6.33	7.6
9.	90	5.27	5.5	24.	239	5.22	5.4
10.	100	6.60	8.2	25.	250	6.18	7.3
11.	110	6.07	7.1	26.	260	7.11	9.2
12.	120	6.49	7.9	27.	270	5.44	5.8
13.	130	5.34	5.6	28.	280	6.07	7.1
14.	140	5.74	6.4				
15. ^e	150	5.39	5.7				

Average raw score of 28 samples = 5.88 Grade Equivalent 6.7

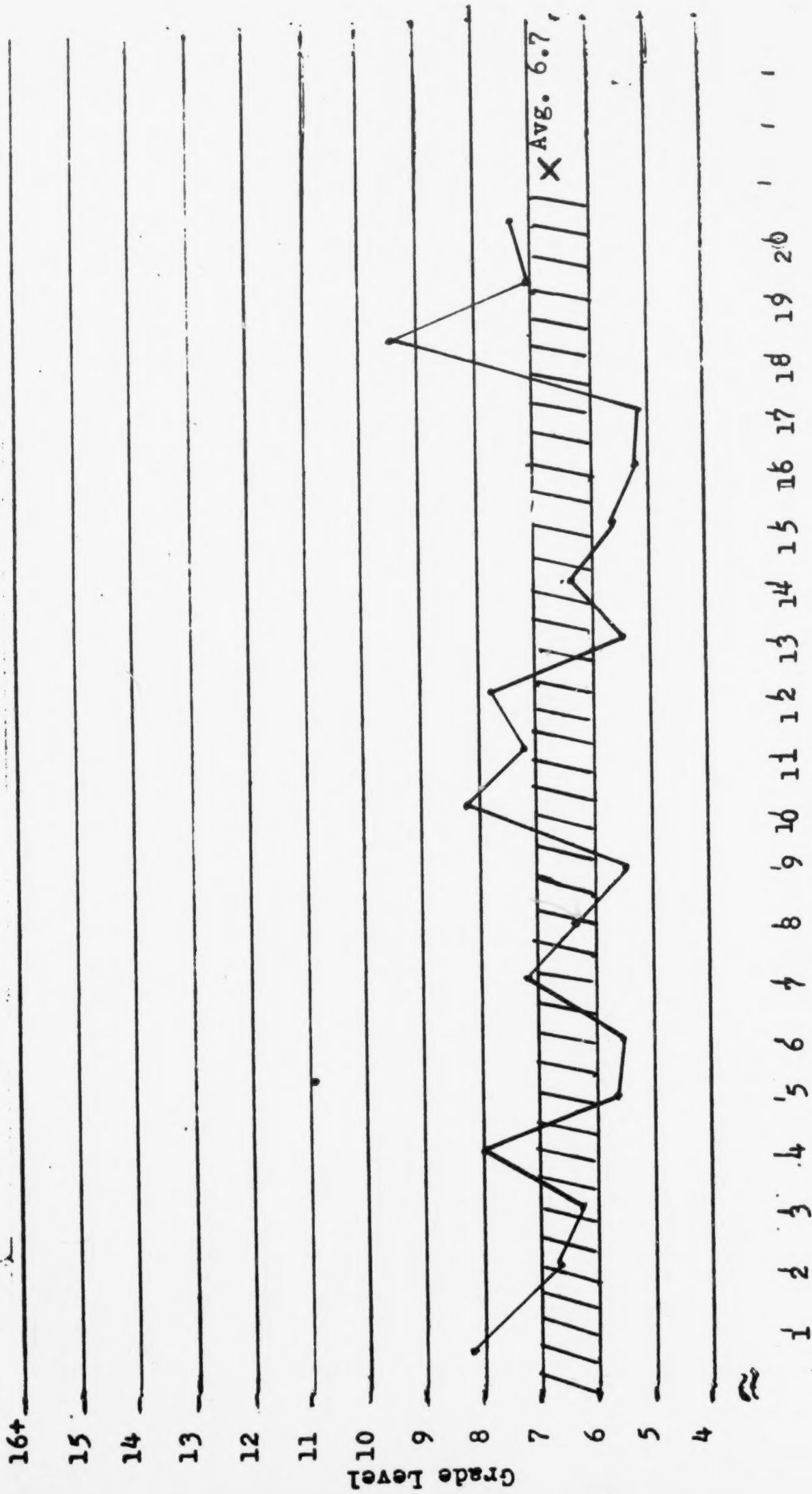
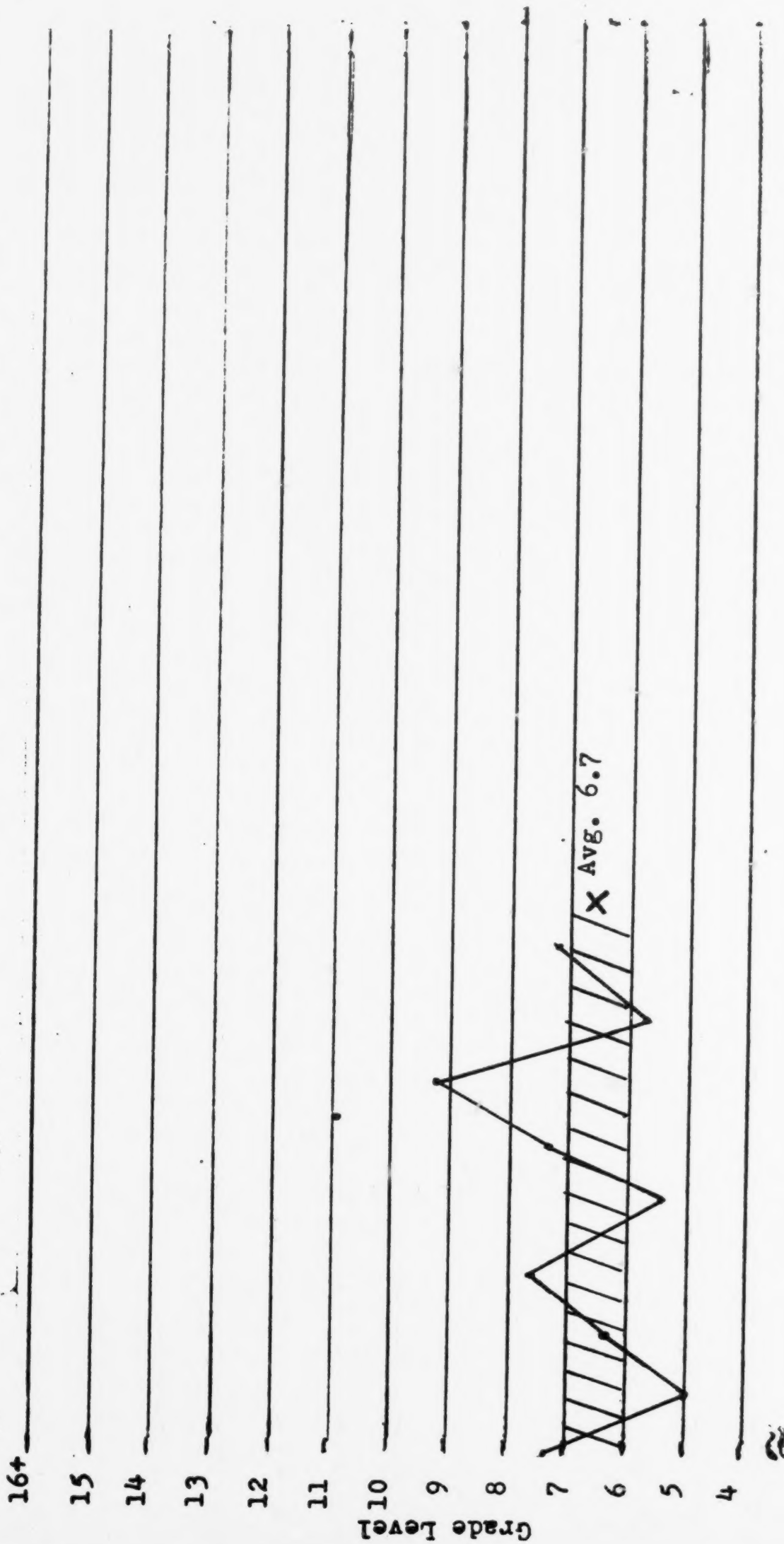


Figure 25. Grade Equivalents of Europe and the Soviet Union - Grade 6 Textbook (I-21)



21 22 23 24 25 26 27 28 Sample Number

Figure 25. (continued)

TABLE 26. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF EXPLORING THE OLD WORLD - GRADE 6 TEXTBOOK (I-22)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	9	6.50	8.0	26.	259	5.01	5.0
2.	19	5.75	6.5	27.	269	5.13	5.2
3.	28	5.02	5.0	28.	278	5.07	5.1
4.	38	7.57	10.1	29.	289	5.81	6.6
5.	49	5.45	5.9	30.	298	5.33	5.6
6.	59	4.44	- 4.0	31.	309	4.92	4.8
7.	69	5.02	5.0	32.	319	6.34	7.6
8.	79	5.69	6.3	33.	329	6.47	7.9
9.	89	5.59	6.1	34.	339	5.76	6.5
10.	99	5.91	6.8	35.	348	5.92	6.8
11.	109	5.96	6.9	36.	358	5.54	6.0
12.	119	8.54	12.0	37.	368	6.28	7.5
13.	129	5.35	5.7	38.	379	6.48	7.9
14.	140	5.60	6.2	39.	388	7.18	9.3
15.	149	5.76	6.5	40.	399	4.91	4.8
16.	158	5.54	6.0	41.	409	5.71	6.4
17.	169	5.86	6.7	42.	419	6.44	7.8
18.	178	5.17	5.3	43.	429	6.47	7.9
19.	189	6.81	8.6	44.	437	6.07	7.1
20.	199	5.60	6.2				
21.	208	6.60	8.2				
22.	219	5.86	6.7				
23.	229	6.13	7.2				
24.	240	5.75	6.5				
25.	249	5.17	5.3				
Average raw score of 44 samples = 5.85 Grade Equivalent 6.7							

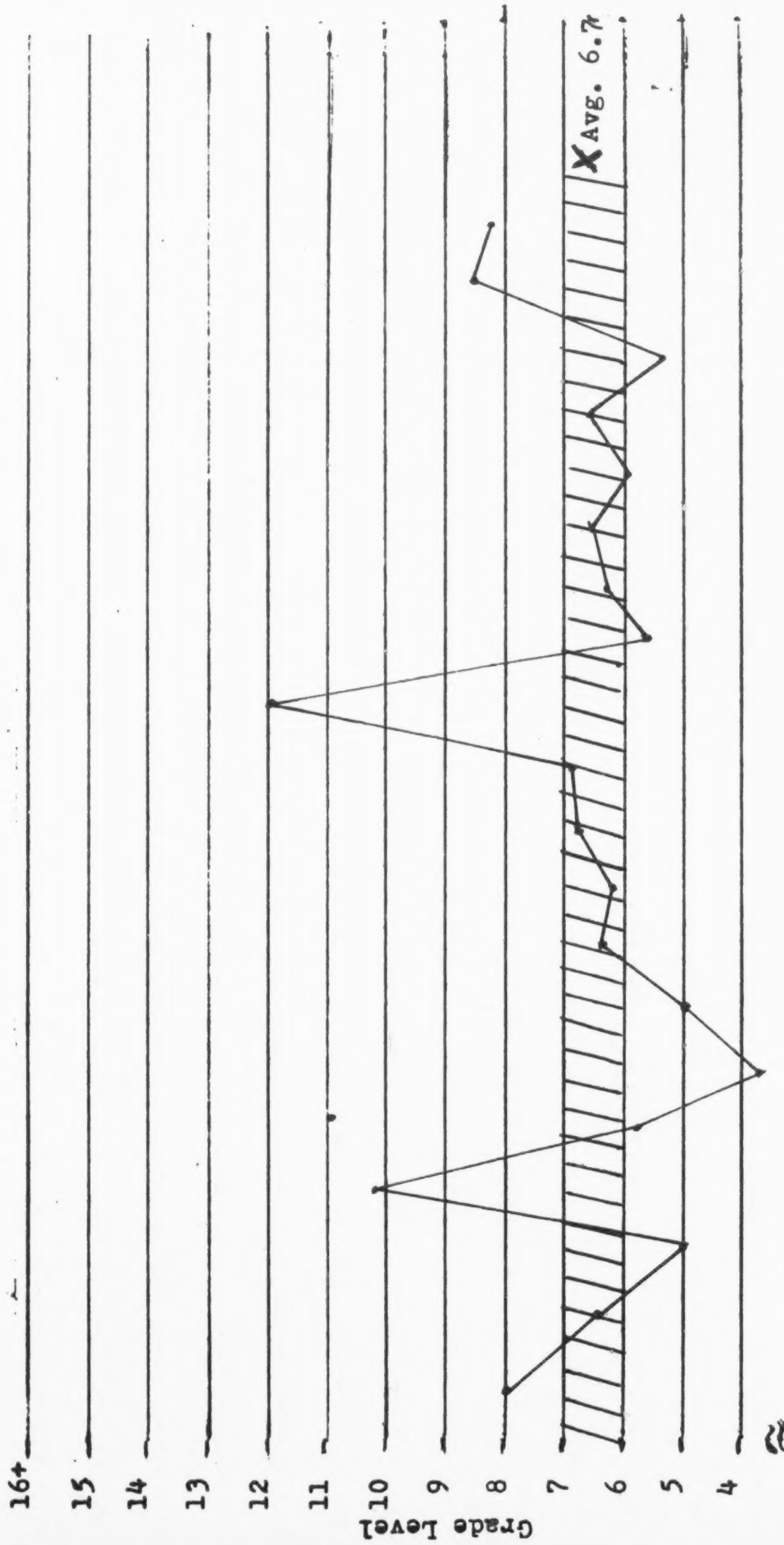


Figure 26. Grade Equivalents of Exploring the Old World - Grade 6 Textbook (I-22)

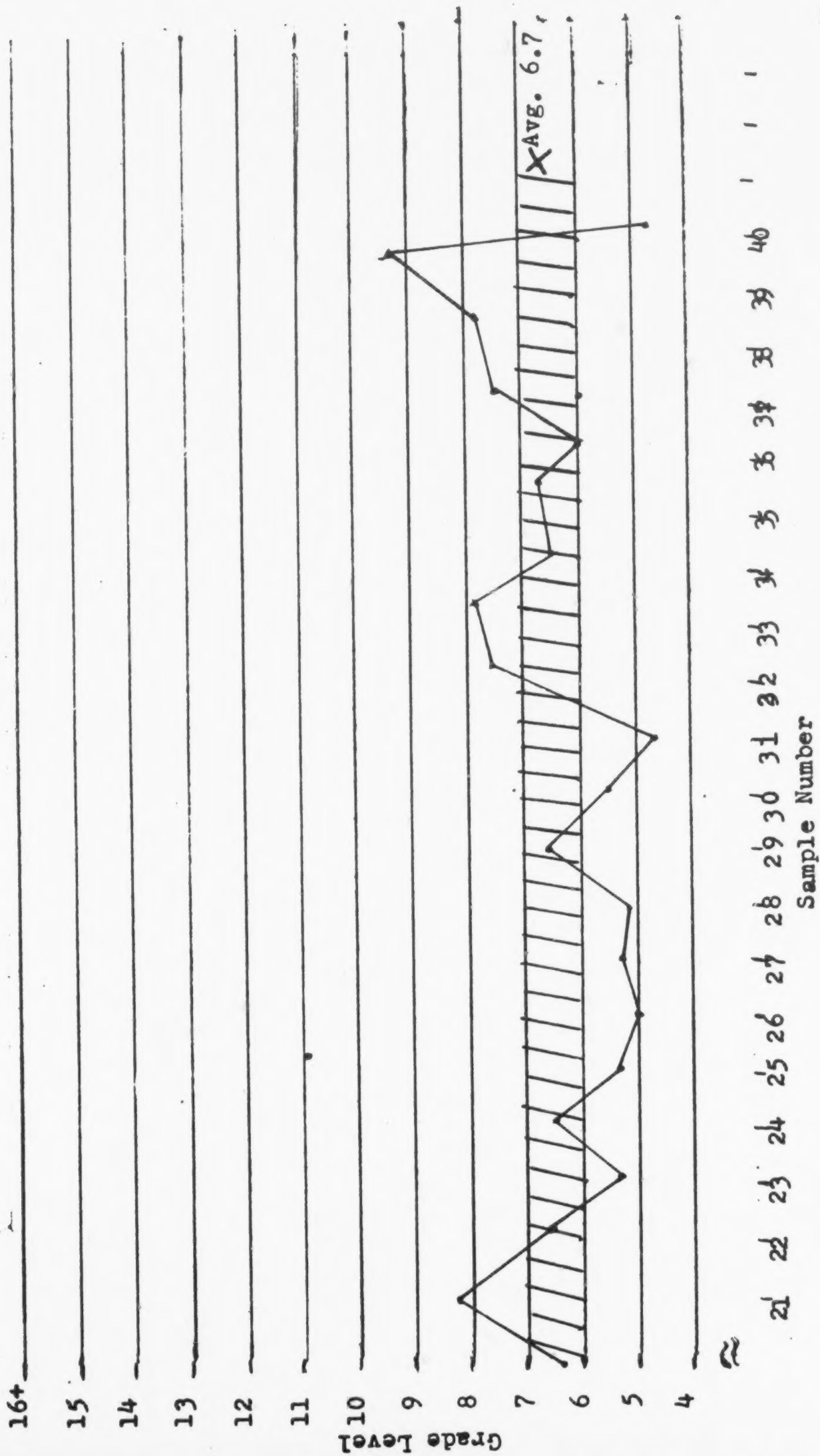


Figure 26. (continued)

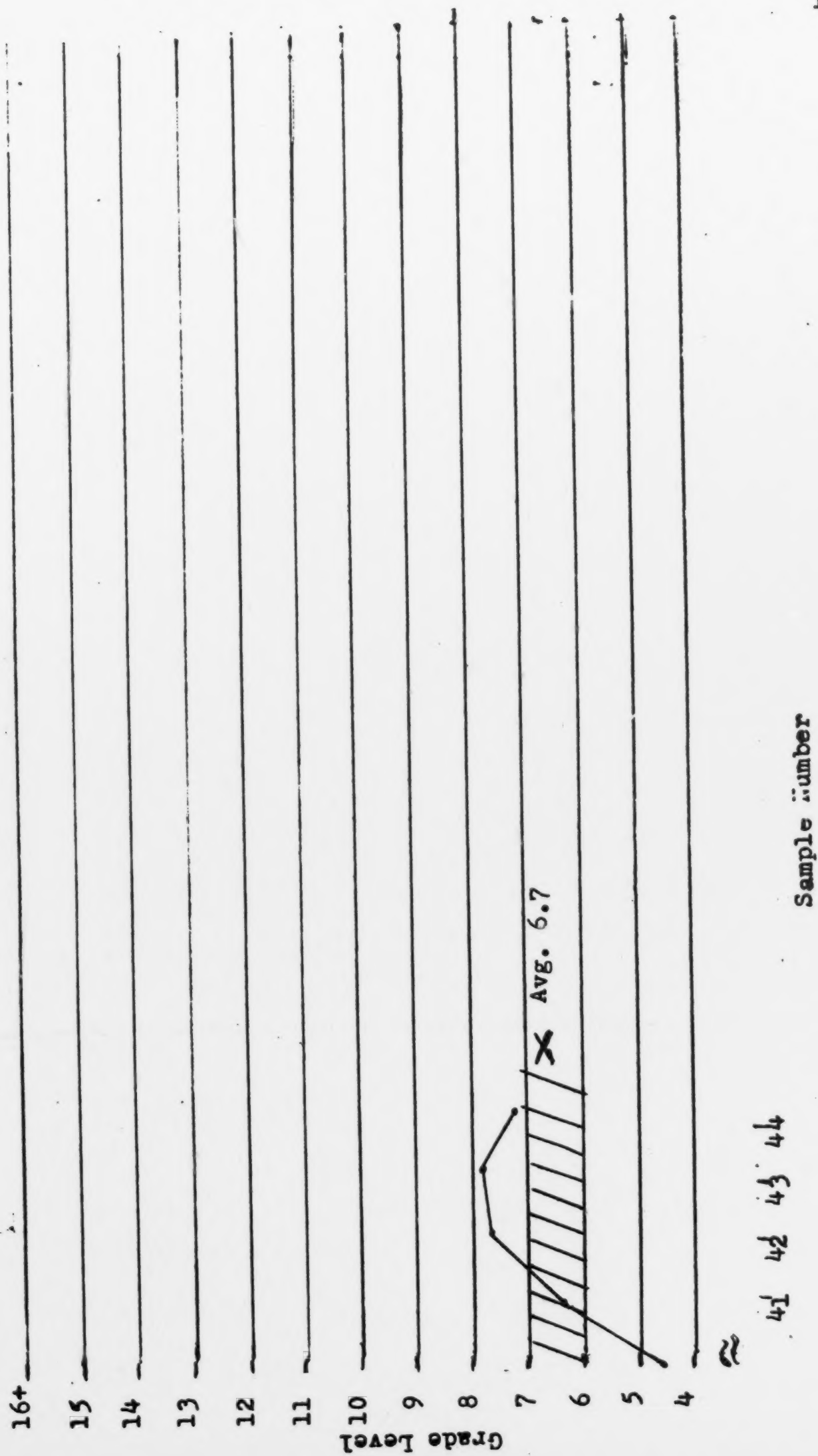


Figure 26. (continued)

TABLE 27. RAW SCORE READABILITY DATA AND GRADE EQUIVALENTS
OF THE GREAT ADVENTURE - GRADE 6 TEXTBOOK (I-23)

SaNo.	Page	RawS	Gr.Eq.	SaNo.	Page	RawS.	Gr.Eq.
1.	11	5.89	6.7	26.	261	5.59	6.1
2.	21	6.60	8.2	27.	271	4.96	4.9
3.	31	5.54	6.0	28.	281	4.62	4.2
4.	41	4.39	4.0	29.	292	5.29	5.5
5.	51	5.66	6.3	30.	301	5.92	6.8
6.	61	5.24	5.4	31.	311	6.60	8.2
7.	71	5.71	6.4	32.	321	5.49	5.9
8.	81	5.59	6.1	33.	331	5.86	6.7
9.	91	7.12	9.2	34.	341	5.23	5.4
10.	101	4.60	4.2	35.	351	5.86	6.7
11.	111	5.17	5.3	36.	361	4.81	4.6
12.	121	4.96	4.9	37.	371	5.96	6.9
13.	131	4.49	4.0	38.	381	5.19	5.3
14.	141	5.64	6.2	39.	391	5.49	5.9
15.	151	4.91	4.8	40.	400	6.92	8.8
16.	161	5.08	5.1	41.	410	5.40	5.8
17.	171	5.96	6.1	42.	421	5.71	6.4
18.	181	4.76	4.5	43.	431	5.39	5.7
19.	191	4.91	4.8	44.	441	5.24	5.4
20.	201	5.17	5.3	45.	451	5.40	5.8
21.	211	4.65	4.3	46.	461	5.71	6.4
22.	221	4.71	4.4				
23.	231	4.60	4.2				
24.	241	4.30	4.0				
25.	251	4.23	4.0				
Average raw score of 46 samples = 6.36 Grade equivalent 5.7							

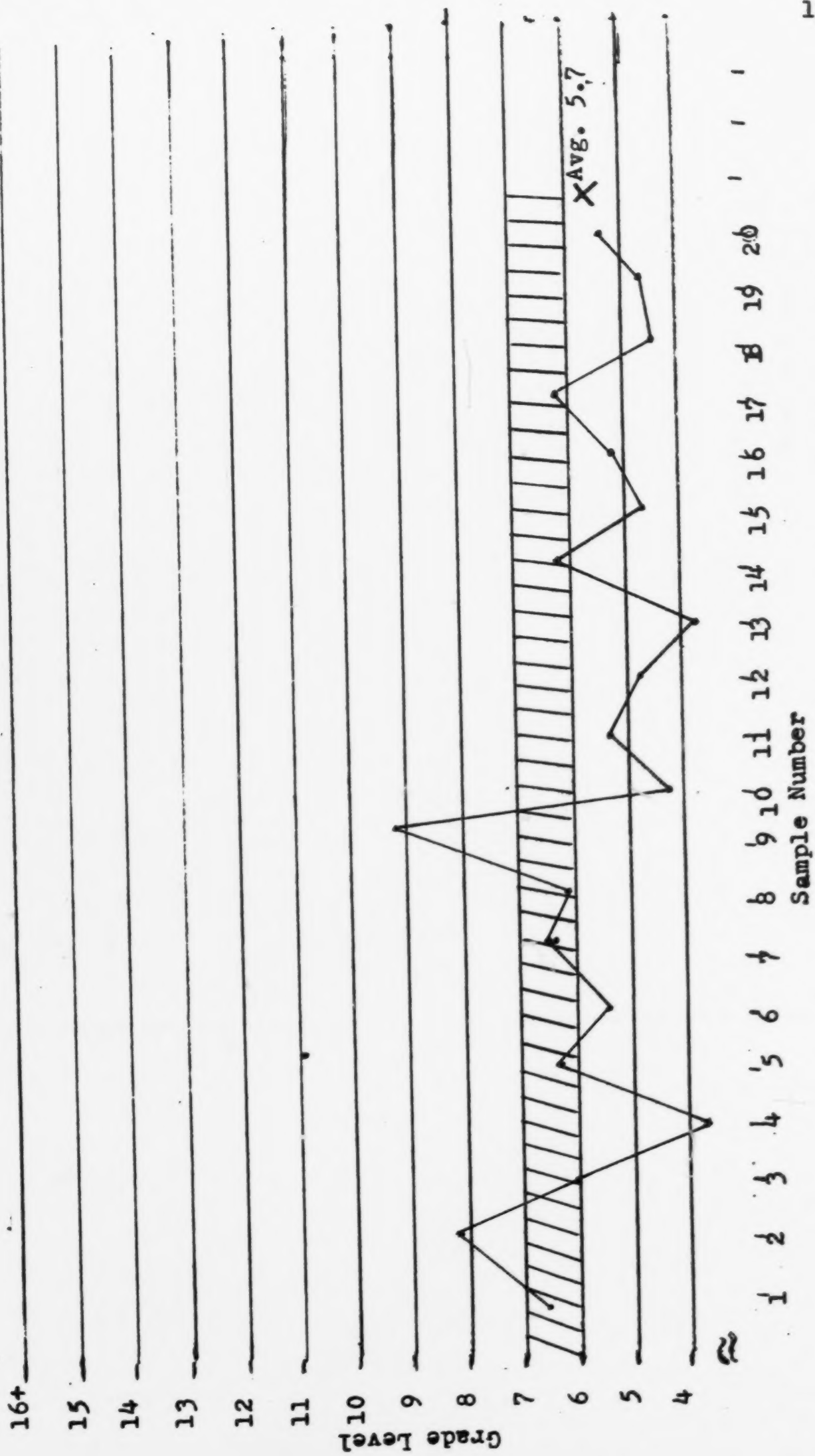


Figure 27. Grade Equivalents of The Great Adventure - Grade 6 Textbook (I-23)

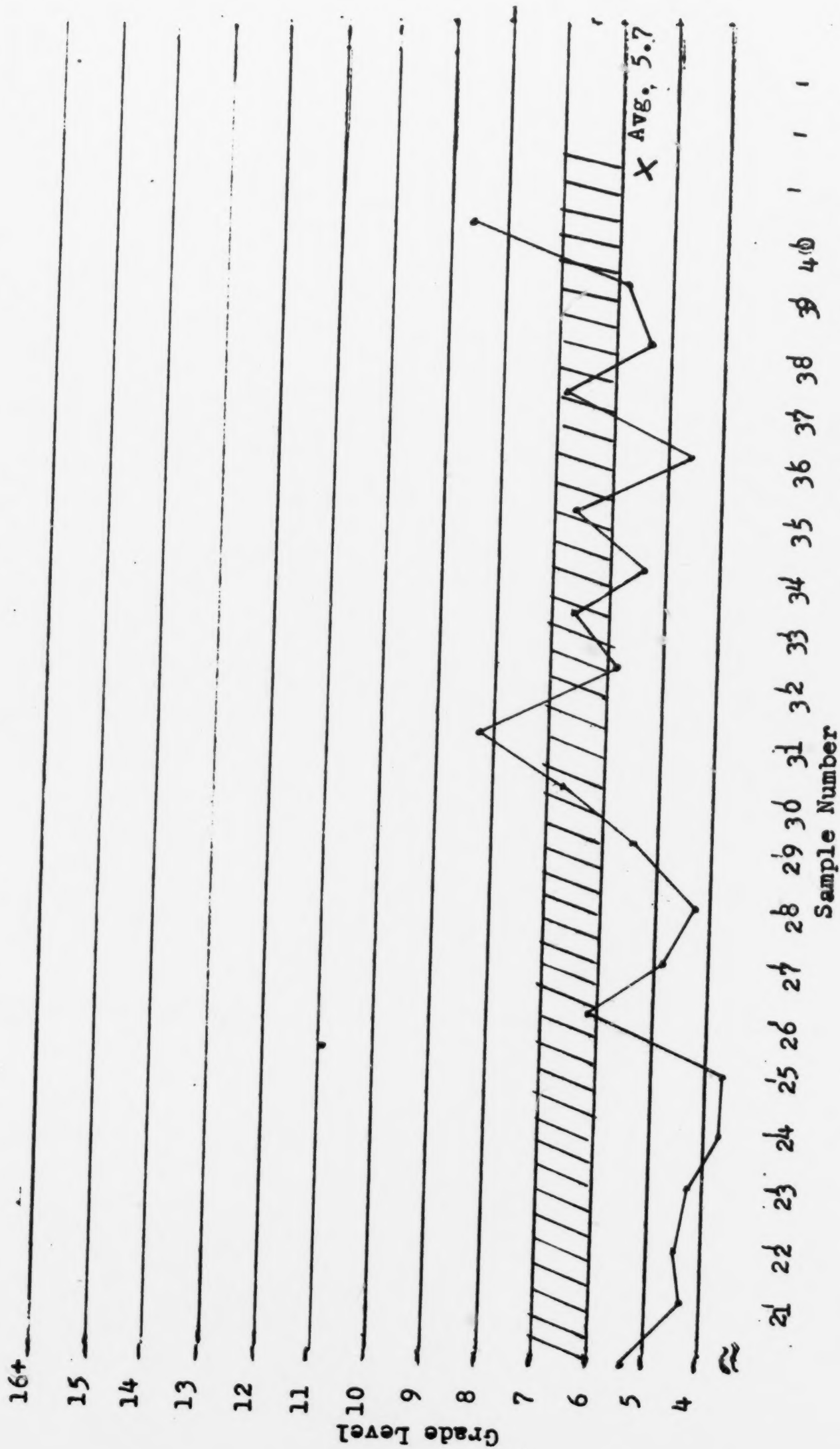
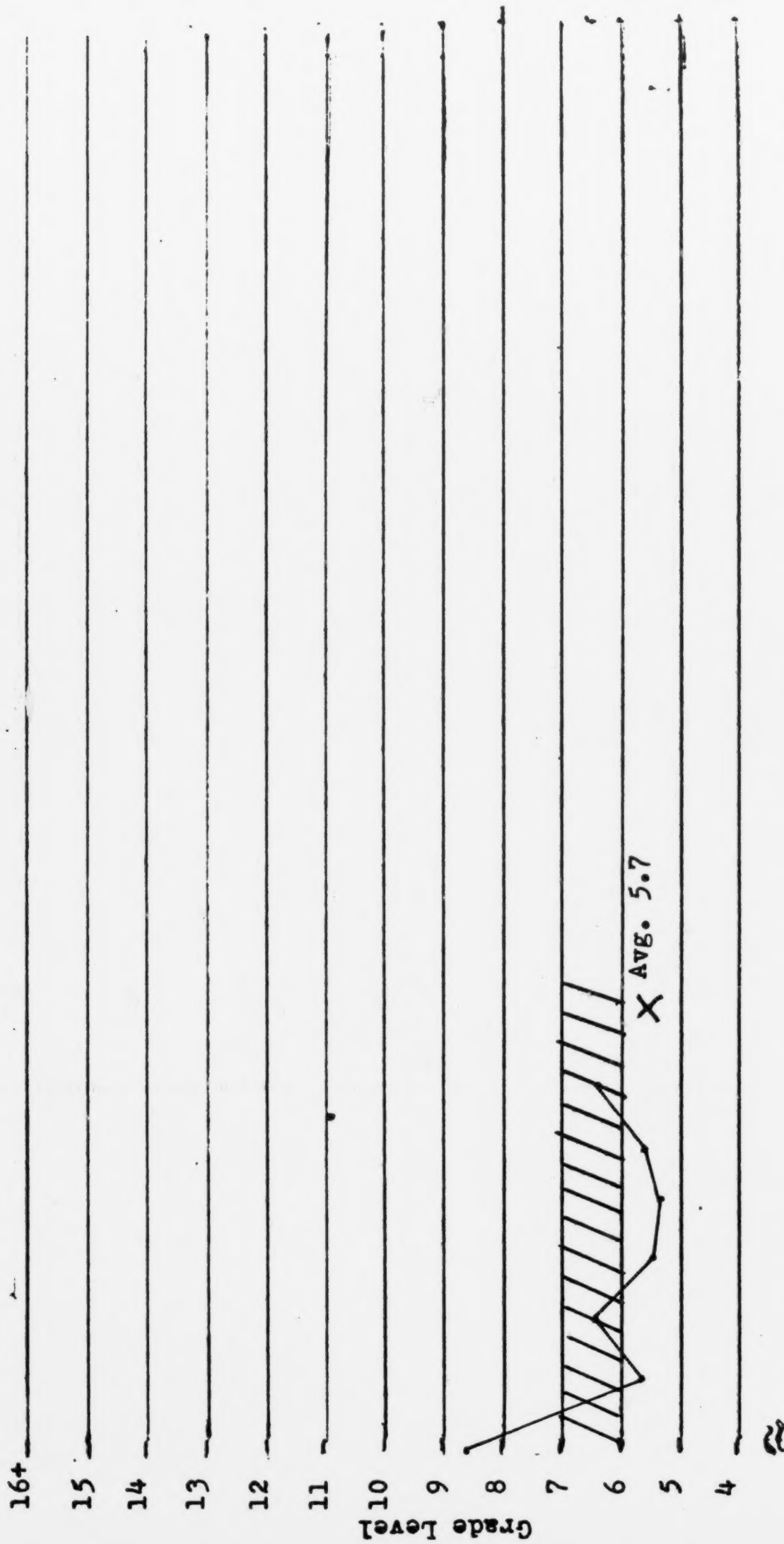


Figure 27. (continued)



Sample Number

Figure 27. (continued)